

Pacific
Salmon
Commission



2004/2005
Twentieth Annual
Report

Pacific Salmon Commission

**Established by Treaty between Canada and
the United States**

March 18, 1985

for the

conservation, management and

optimum production of

Pacific salmon

Twentieth Annual Report 2004/2005

Vancouver, B.C.

Canada

August 2006



2007-05574/

PACIFIC SALMON COMMISSION

TOTAL WILDERNESS TREATY BETWEEN CANADA
AND THE UNITED STATES OF AMERICA
(MARCH 19, 2005)

500 JEFFERSON STREET
VANCOUVER, BC V6E 3H7
TELEPHONE: (604) 684-8807
FAX: (604) 684-8707

Our File:

Your File:

Letter of Transmittal

In compliance with Article II, Paragraph 14 of the Treaty between the Government of Canada and the Government of the United States of America concerning Pacific salmon, it is my pleasure as Chair of the Pacific Salmon Commission to present my compliments to the Parties and to transmit herewith the Twentieth Annual Report of the Commission.

This report summarizes the activities of the Commission for the fiscal year April 1, 2004 to March 31, 2005.

On June 3, 1999 the Parties signed a comprehensive long-term agreement under the Pacific Salmon Treaty. The agreement established abundance-based fishery regimes for the major interception fisheries in the United States and Canada. The arrangements are all for ten years, except those for Fraser River sockeye and pink salmon, which are for 12 years. The agreement also established two bilaterally-managed regional funds, and included provisions to enhance bilateral cooperation, improve the scientific basis for salmon management and apply institutional changes to the Pacific Salmon Treaty.

A summary of the agreement is available on the PSC website: www.psc.org.

Reports on the results of the 2004 fishing season presented by the Parties and on meetings of the Commission, the Standing Committee on Finance and Administration and the Northern and Southern Fund Committees are presented in summary. Executive summaries of documents prepared by Pacific Salmon Commission staff and the joint technical committees during the period covered by this report are also presented.

The Auditors' report on financial activities of the Commission during the fiscal year April 1, 2004 to March 31, 2005, as approved by the Commission, is also included in this report.

Yours truly,

Mr. Paul Sprout
Chair

PACIFIC SALMON COMMISSION

OFFICERS for 2004/2005

Chair	Dr. John Davis (to January 2005) Mr. Paul Sprout (from January 2005)
Vice-Chair	Mr. David Bedford

COMMISSIONERS

Canada

Mr. Ron Fowler
Mr. Hubert Haldane (to January 2005)
Mr. Gerry Kristianson
Mr. Rich Chapple (to January 2005)
Mr. Garnet Jones
Mr. Russ Jones
Mr. Paul Macgillivray
Mr. Paul Kariya (from January 2005)
Mr. Arnie Narcisse (from January 2005)

United States

Mr. Ron Allen
Mr. David Bedford
Mr. Larry Rutter
Mr. Larry Cassidy
Mr. Rollie Rousseau
Mr. Jev Shelton
Mr. David Balton
Mr. Olney Patt Jr.

SECRETARIAT STAFF

Executive Secretary
Administrative Officer
Chief Biologist

Mr. Don Kowal
Mr. Ken Medlock
Mr. Mike Lapointe

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INTRODUCTION

Interception of Pacific salmon bound for rivers of one country in fisheries of the other has been the subject of discussion between the Governments of Canada and the United States of America since the early part of this century. Intercepting fisheries were identified through research conducted by the two countries on species and stocks originating from Alaska, British Columbia, Washington, Oregon and Idaho. The results of this research identified that Alaskan fishers were catching salmon bound for British Columbia, Idaho, Oregon and Washington. Canadian fishers off the West Coast of Vancouver Island were capturing salmon bound for rivers of Washington and Oregon. Fishers in northern British Columbia were intercepting salmon returning to Alaska, Washington, Oregon and Idaho, and United States fishers were catching Fraser River salmon as they traveled through the Strait of Juan de Fuca and the San Juan Islands towards the Fraser River.

Management of stocks subject to interception became a matter of common concern to both Canada and the United States. A mechanism to enable the countries to reap the benefits of their respective management and enhancement efforts was required. That mechanism is now provided through the Pacific Salmon Treaty, which entered into force upon the exchange of instruments of ratification by the President of the United States of America and the Prime Minister of Canada on March 18, 1985.

The Pacific Salmon Commission, guided by principles and provisions of the Treaty, establishes general fishery management regimes for international conservation and harvest sharing of intermingling salmon stocks. Each country retains jurisdictional management authority but must manage its fisheries in a manner consistent with the provisions of the Treaty. Implementation of the principles of the Treaty should enable the United States and Canada, through better conservation and enhancement, to prevent overfishing, increase production of salmon, and ensure that each country receives benefits equivalent to its own production. The Commission also serves as a forum for consultation between the Parties on their salmonid enhancement operations and research programs.

The organizational structure of the Commission is currently focused on four geographically oriented panels. The terms of new Treaty arrangements signed by the Parties in June, 1999 provided for the creation of a new Transboundary Panel. The Transboundary Panel's stocks of concern originate from the Alsek, Stikine and Taku River systems. The Northern Panel's stocks of concern are those which originate in rivers situated between Cape Suckling in Alaska and Cape Caution in British Columbia. The Southern Panel's stocks of concern are those which originate in rivers located south of Cape Caution, other than Fraser River sockeye and pink salmon. The Fraser River Panel has special regulatory responsibilities for stocks of sockeye and pink salmon originating from the Fraser River.

The functions of panels are to review annual post-season reports, annual pre-season fishing plans and ongoing and planned salmonid enhancement programs of each country, and to provide recommendations to the Commission for development of annual fishery regimes in accordance with the objectives of the Treaty. These plans, once adopted by the Commission and the governments, are implemented by the management agencies in each country.

The Fraser River Panel, in addition, has been accorded special responsibility for in-season regulation of Fraser River sockeye and pink fisheries of Canada and the United States in southern British Columbia and northern Puget Sound, in an area designated as Fraser River Panel Area Waters. Scientific and technical work is conducted for the Panel by the Fishery Management Division of the Commission's Secretariat staff.

Negotiations designed to lead to agreed fishery regimes were conducted at the government-to-government level commencing in the spring of 1998. A comprehensive agreement was reached by the Parties on June 30, 1999.

As a result of the agreement, long-term fishing arrangements are in place for ten years, except for Fraser River sockeye and pink salmon, which is a 12-year arrangement.

With fishery arrangements in place, the meeting agendas for the Commission have concentrated on implementation of the elements of the new arrangements that will improve fisheries management and aid the countries efforts to recover weakened stocks. These provisions include establishment of two bilaterally-managed restoration and enhancement funds, provisions to enhance bilateral cooperation, improvements to the scientific basis for salmon management and application of institutional changes to the Pacific Salmon Commission.

On December 4, 2002, the Parties signed an international agreement detailing a cooperative approach to conservation of salmon stocks originating in the Yukon River in Canada. The agreement will be included as an Annex of the Pacific Salmon Treaty. As such, the Yukon River Salmon Agreement is separate from the Pacific Salmon Treaty because it sets out a distinct regime for Yukon River salmon, while adhering to the broad science-based management principles of the Pacific Salmon Treaty.

The Commission meets at least once annually and conducts its business between meetings through its permanent Secretariat located in Vancouver, British Columbia. In the period April 1, 2004 to March 31, 2005, the Commission met on four occasions:

1. Extraordinary Session
April 6-8, 2004 – Seattle, Washington
2. Commission Executive Session
October 19-21, 2004 – Victoria, B.C.
3. Post-Season Meeting of the Commission and Panels
January 10-14, 2005 – Vancouver, B.C.
4. Twentieth Annual Meeting of the Commission
February 14-18, 2005 – Portland, Oregon

This, the Twentieth Annual Report of the Pacific Salmon Commission, provides a synopsis of the activities of the Commission and its subsidiary bodies during its Twentieth fiscal year of operation, April 1, 2004 to March 31, 2005.

Activities of the Commission

PART I

ACTIVITIES OF THE COMMISSION

A. EXTRAORDINARY SESSION OF THE PACIFIC SALMON COMMISSION

April 6-8, 2004, Seattle, Washington

The Extraordinary Session of the Pacific Salmon Commission was called to deal with issues surrounding the Transboundary Rivers. The issues involved harvest sharing, terminal exclusions, Canada's proposal to apply an ISBM fishing regime to the Transboundary Rivers and a U.S. proposal for a subsistence fishery on the Stikine River.

The Parties were not able to come to an agreement during the Extraordinary Session.

B. EXECUTIVE SESSION OF THE PACIFIC SALMON COMMISSION

October 19-21, 2004, Victoria, B.C.

The Commission met four times in bilateral Executive Session during this meeting period.

Dr. David Hankin, a member of the Committee on Scientific Cooperation (CSC) and the Chair of the Expert Panel on the Future of the CWT Recovery Data System presented an update on the work of the Panel.

Mr. Rich Lincoln and Mr. Wayne Saito, Chair and Vice Chair of the Fraser River Panel reported that the Panel expected to provide draft Annex language for the Commission's consideration at the February 2005 session. It was announced that Mr. Lincoln and Mr. Saito would no longer be members of the Fraser River Panel. They were both presented with Certificates of Appreciation from the Pacific Salmon Commission.

Mr. Angus MacKay, Endowment Fund Coordinator, presented a report on the projects chosen to be funded by the Northern and the Southern Fund Committees.

Commissioner Bedford presented a discussion paper entitled "Standardizing Salmon Genetic Stock Identification". Genetic Stock Identification (GSI) had potential applications for the Commission but there were not any coast wide standards of use in place. The Commission agreed that the Committee on Scientific Cooperation (CSC) be directed to present an issue paper and recommendations about what processes should be followed regarding GSI at the January session. The CSC would coordinate with the Commission's technical committees to investigate the potential applications for GSI in the various fisheries.

The Parties exchanged lists of experts who agreed to have their names stand on the Technical Dispute Settlement Board Roster.

The Commission formally adopted the policy for the "Annual Process for Consideration of Changes to PST-related Programs" which was endorsed in principle in February 2004.

Commissioner Macgillivray presented a proposal entitled "Consideration of Changes in the Assessment Program for Fraser River Sockeye Salmon Stocks". The document was consistent with the requirements of the newly adopted PSC policy.

Canada announced that there would be a special review of the 2004 Fraser River sockeye season. Hydroacoustic counts at Mission were significantly higher than the number of fish on the spawning grounds when taking into account expected on-route mortality. The review would focus on three areas; enforcement and illegal fishing upstream of Mission; the accuracy of the Mission acoustic count; and uncertainty about the impact of environmental conditions on on-route mortality and the ability to use indicators such as water flows and water temperatures to get an accurate assessment of likely on-route mortality.

The Roster of PSC Officers for 2004/2005 was tabled.

Kathy Mulholland and Teri Tarita of the PSC Secretariat staff gave a demonstration of the newly redesigned Commission website, which can be found at www.psc.org.

The Commission reviewed the annual work plans submitted by the Panels and Committees. Instructions to Panels and Committees were adopted.

C. MEETING OF THE COMMISSION AND PANELS

January 10-14, 2005, Vancouver, B.C.

The Commission met five times in executive session during this meeting.

Two newly appointed Canadian Commissioners, Mr. Paul Kariya, Executive Director of the Pacific Salmon Foundation and Mr. Arnie Narcisse, Chair of the BC Aboriginal Fisheries Commission, were introduced.

The Parties tabled their Post Season Reports.

Commissioner Kristianson gave a presentation about POST, the Pacific Ocean Salmon Tracking project, which involves the use of acoustic transmitters as a method of tracking salmon and other marine species.

Commissioner Sprout provided an update on Canada's Fraser River Sockeye Review, headed by Mr. Brian Williams; a former Chief Justice of the Supreme Court of B.C. Mr. Williams would work with a multi-interest group comprised of representatives from First Nations, commercial fishing interests, recreational fishing interests and environmental groups. The review's final report was due in April 2005.

Mr. Steve Pennoyer and Dr. Laura Richards gave an update on the activities of the Committee on Scientific Cooperation (CSC). Mr. Pennoyer and Dr. Richards planned to meet with the co-chairs of the Commission's Technical Committees during the week to gather information about Genetic Stock Identification (GSI). The CSC would report to the Commission at the February session on the information gathered.

Mr. Mark Saunders of Fisheries and Oceans Canada gave a presentation about Canada's Wild Salmon Policy entitled "Pacific Salmon Briefing: A Policy Framework for Conservation of Wild Pacific Salmon".

Mr. Kristianson provided an update on the work of the Chinook Interface Group (CIG). The Group met with the Chinook Technical Committee (CTC) and received a document

containing new examples of Table One of the Chinook Annex of the Pacific Salmon Treaty, putting them into a total mortality framework. The CTC raised some issues for the CIG to clarify. The CIG also received an updated report on progress made by the CTC in moving towards agreed-upon escapement goals.

Mr. Angus Mackay, Endowment Fund Coordinator, gave an update on the projects funded in 2004. There were 63 projects funded for a total of \$3.9 million (US). Twenty-two were funded by the Northern Fund Committee and 41 by the Southern Fund Committee.

Dr. Brent Hargreaves and Dr. Gary Morishima, co-chairs of the Selective Fisheries Evaluation Committee (SFEC), appeared before the Commission to give an update on the Committee's activities. They presented an informal summary of the Mass Marking (MM) and Mark Selective Fishery (MSF's) proposals submitted by the agencies to SFEC for the 2005 season. A more formal report would be presented to the Commission in February. The Committee planned to ask the agencies to provide information about what happened in both their marking programs and their mark selective fisheries once executed. SFEC hoped to provide that information to the Commission on an annual basis.

Mr. Pat Pattillo and Mr. Gordon McEachen presented a report on the activities of the Southern Panel. One issue upon which the Panel required direction from the Commission was about the Chum Agreement made in February 2004. The Panel asked if the Agreement should be put into annex language or if it should continue to be "test-driven" for another year. The Panel was advised to continue to test the agreement for one more year. The intent was to convert the Agreement to annex language based upon one additional year of successful operation.

Ms. Lorraine Loomis and Mr. Paul Ryall appeared before the Commission on behalf of the Fraser River Panel. The Panel was developing wording to amend and operationalize Annex 4, Chapter 4 of the Treaty. The Panel hoped to bring completed, agreed-upon language to the Commission at the February session.

Mr. Gord Zealand and Dr. John Clark, Chair and Vice Chair of the Transboundary River Panel presented a report on the Panel's activities. The Panel was close to agreeing on new annex language that would be brought forward to the Commission for approval at the February session.

D. PACIFIC SALMON COMMISSION ANNUAL MEETING February 14-18, 2005, Portland, Oregon

The Commission met four times in bilateral session during this meeting.

The Commission discussed the costs associated with the electronic sampling of chinook and coho in B.C. Fisheries. A summary of the costs to Canada of electronic sampling of chinook and coho and cost estimates of several options of how to expand sampling in both the commercial and recreational sectors was provided.

Mr. Barry Rosenberger of Fisheries and Oceans Canada gave a presentation entitled "Okanagan Sockeye Initiatives". Three members of the Okanagan Nation who were active in the project, Mr. Howie Wright, Mr. Byron Lewis and Ms. Dina Mission, were in attendance.

Dr. Richards and Mr. Pennoyer of the Committee on Scientific Cooperation presented a report on the Committee's assignments which focused upon the Coded-Wire-Tag (CWT)

Review, Fraser River Late Run Sockeye studies, and genetic stock identification (GSI). Regarding genetics, the CSC canvassed the Technical Committees on their current and potential uses of genetic technologies. The Committee proposed a process to create a coastwide standardized genetic baseline and a process to facilitate tissue and data sharing between genetic labs.

Commissioners Kristianson and Shelton gave an update on the activities of the Chinook Interface Group (CIG). The Group had met with the Chinook Technical Committee (CTC) several times over the course of the week and received reports on a number of topics. The CIG recommended that the Commission endorse the CTC's recommendation on terminal exclusions on the Situk River. The Commission agreed to accept the recommendation.

Mr. Angus MacKay, Endowment Fund Coordinator, presented the "Annual Report of the Southern Boundary Restoration and Enhancement Fund and the Northern Boundary and Transboundary River Restoration and Enhancement Fund for the year 2004".

Mr. Gord Zealand and Dr. John Clark, Chair and Vice Chair of the Transboundary Panel reported that the Panel was able to come to an agreement on a revised annex. They presented a document entitled "Amendments to Annex IV Chapter 1: Transboundary Rivers: Transboundary Panel Bilateral Agreement".

It was announced that Mr. Zealand was retiring from Fisheries and Oceans Canada. The Commission thanked him for the work he had done for the PSC over the years.

Mr. David Einarson and Mr. Gord Williams, Chair and Vice Chair of the Northern Panel gave a report on the Panel's activities, which included reviewing the Northern Boundary sockeye reconstructions for 2002 and 2003, reviewing a technical report on scale analysis vs. DNA analysis, and discussing priorities for 2006 proposals to the Northern Fund Committee.

Mr. Gordon McEachen and Mr. Pat Pattillo, Chair and Vice Chair of the Southern Panel gave a report on the activities of the Panel. The Panel reviewed the post-season reports, discussed developing recommendations to make the annual enhancement reports more useful and received an update from the Coho Technical Committee on a number of items, in particular on the annual report for 2003. Regarding chum fisheries, the Agreement that was in place would be test driven again in 2005 with a view to convert it to Annex language for the 2006 season. At the Commission's request, the Panel discussed the implications of the fishing pattern changes for chinook in the WCVI troll fishery with a view to improving U.S. pre-planning effectiveness.

Ms. Lorraine Loomis and Mr. Paul Ryall reported on the activities of the Fraser River Panel. The Panel reached an agreement on changes to the Fraser River Annex, prepared a response to Canada's proposal regarding escapement survey coverage, completed its 2004 post-season review and began its 2005 pre-season planning.

It was announced that Mr. Mike Grayum, a member of the Joint Fraser River Technical Committee for many years, would be leaving the PSC process. He was thanked for his contributions to the Commission.

Activities of the Standing Committees

PART II

ACTIVITIES OF THE STANDING COMMITTEES

A. MEETINGS OF THE STANDING COMMITTEE ON FINANCE AND ADMINISTRATION

1. Committee Activities

The Committee met on December 9, 2004 and January 12, 2005 in Vancouver, BC and February 16, 2005 in Portland OR to consider a range of financial and administrative issues. The Committee's deliberations the focus was primarily on a review of the Commission's current budget proposals for FY 2005/2006 and a budget forecast for FY 2006/2007 and beyond.

The Committee approved the Commission budget at the contribution level of C\$1,545,507 per party (Appendix C) with expenditures of C\$3,443,643. This represents an increased contribution of \$55,390 per party over last year. The Committee **recommended** acceptance of this budget. The new budget does not provide for any additional programs in 2005/2006. During this review it was indicated that cuts to programs had already been made in order to produce this budget.

The Committee reviewed the status of the revolving test-fishing fund and approved the January 12, 2005 staff recommended uses of the surplus funds that were generated in 2003/2004 but had been uncommitted pending the resolution of the United States funding issues.

The Committee also reviewed staff projections of expenditures for the balance of the current fiscal year. The staff reported a forecast carry-over of C\$342,629 to next year. It was **recommended** that the \$342,629 carryover from 2004/2005 be carried to fiscal 2005/2006 to offset costs of programs initiated in this fiscal year.

The Executive Secretary reviewed the projected budgets for 2006/2007 and 2007/2008.

The Committee reviewed the meeting schedule and accepted the proposal to have the October 16-18, 2007 Executive Session in a United States location. Portland was chosen for the January 14-18, 2008 meeting and February 11-15, 2008 was chosen for the 23rd Annual Meeting in Vancouver.

2. Secretariat Staffing Activities

A list of Secretariat staff employees as of March 31, 2005 is presented in Appendix D.

An updated membership list for panels, standing committees, joint technical committees and ad hoc working groups as of March 31, 2005 is presented in Appendix E.

B. MEETINGS OF THE STANDING COMMITTEE ON SCIENTIFIC COOPERATION

During the meeting cycle, the Committee on Scientific Cooperation focused on three main areas of concern: the Coded-Wire-Tag Review; Fraser River Late Run Sockeye studies; and an assignment involving genetic stock identification.

Dr Hankin, a member of the CSC, served as chair of the Expert Panel on the Future of the Coded Wire Tag (CWT) Recovery System for Pacific Salmon. The first draft of the peer review report from the June 2004 CWT workshop was expected to be completed by the summer of 2005.

CSC members kept abreast of the developments surrounding late-run Fraser River sockeye studies. They attended a session about the review of the 2004 season and recommended that the Commission sponsor a workshop of the involved principle investigators in June 2005 to assess progress to date and to consider options for 2006.

Regarding genetics, the CSC canvassed the Commission's Technical Committees about current and potential uses of genetic technologies. The Committee proposed a process for creating a coast-wide standardized genetic baseline as well as a process for facilitating tissue and data sharing between genetic labs.

C. MEETINGS OF THE NORTHERN AND SOUTHERN FUND COMMITTEES

In fiscal year 2004/05 the Northern and Southern Fund Committees agreed that given the congruent nature of their agendas; global economic conditions and the status of the Fund, it was appropriate to meet not separately, but together as a Joint Fund Committee.

The first meeting of the fiscal year was an in person meeting held at the PSC offices in Vancouver on May 27th and 28th 2004. John Myrah and Sean Macaulay of Hewitt and Associates in their capacity as consultants to the Fund Committee brought forward a re-examination of the Fund's US equity structure with a view to potential investment structure improvements and opportunities for diversification now that the Fund is fully invested and overall assets are larger. After hearing their briefing and discussing the pros and cons the Committee requested Hewitt to prepare a search document exploring opportunities offered by passive and enhanced-passive large cap and active small/mid cap US equity managers and to report back to the Committee in October. Also on the agenda was an in person meeting with representatives from MFS, the Funds US equity managers. Items that were discussed included a change in management fee structure in place of a long-expected transfer of the account to a pooled fund vehicle which although initially offered by MFS had now been unexpectedly withdrawn as an option. There was also discussion about the firm's performance record as managers of the Fund's US equities portfolio and also a report on MFS's response to a recent SEC investigation and the changes implemented as a result. Representatives from Putnam were also invited to address the Committee in person. The Committee had requested this meeting to hear firsthand about the continuing fallout from the SEC investigation, the subsequent restructuring at Putnam and the effect these changes were having on the performance of the Fund's investments.

The second meeting of the year was an in person meeting held in Victoria, BC on October 18th, 2004. John Myrah of Hewitt and Associates opened the meeting by providing Committee members with an in depth update on the recent performance of MFS and Putnam. Sean Macaulay of Hewitt and Associates then took the Committee back to the issue of US equity structure options last discussed in May. From these briefings the Committee took due note of the fact that over the past four years MFS's performance had not been

satisfactory and the Committee had no confidence in MFS's assurance of a turn around. Viable alternatives were available that would achieve a higher annual yield while protecting the principal of the Fund. Therefore a motion was passed to terminate the Funds relationship with MFS and move to an alternative US equity structure. Mr. Myrah was tasked with bringing forward a shortlist of potential replacement managers to MFS with whom the Fund Committee could invest their US equity portfolio.

The third meeting of the year was an in person meeting held at the PSC offices in Vancouver, BC on November 16th and 17th, 2004. As usual the November meeting was marked by the annual Fund investment manager performance report and interviews. The Committee was generally satisfied with the performance and reports from Barclays Global Investors and from Brandes Investment Partners. The interview with Putnam Investments covered the company's on-going challenges since its investigation by U.S. mutual fund regulators. In particular, the Committee was very concerned about poor performance. The Putnam representatives offered a fee break; recommended staying the course and urged the Committee to trust in the improvements they'd made to their business. As they had done in October with MFS, Hewitt and Associates staff had prepared a four year performance evaluation of Putnam and a review of alternative strategic investment options for the Committee to consider now that the Fund was fully invested. There was a lengthy debate on Putnam's record and future prospects and on the pros and cons of diversifying the Funds investment style bias. The outcome was to task John Myrah with preparing an in-depth analysis of structural and style-related reasons for changing the Fund's non-North American equity manager and to bring forward a list of potential alternative managers. (Note: at a subsequent meeting in January 2005, the Joint Committee decided to replace Putnam with a value-biased investment fund to be managed by a new manager, and set in motion a process to select a candidate).

The Joint Committee's fourth meeting was held on January 14th, 2005 at the Wall Centre in Vancouver. Acting on a Joint Committee request from November 2004, Mr. John Myrah of Hewitt and Associates provided an in-depth analysis of structural and style related reasons for changing the Fund's non-North American equity manager, Putnam Investments. The Committee agreed that the "downside protection" of changing their EAFE investment strategy from a core style to a value oriented investment style would beneficially diversify their portfolio. A motion directing staff to effect this change was passed. With Putnam Investments being a core style manager, the motion triggered the termination of the Fund's association with that firm. Mr. Myrah then provided a long list of potential value oriented style managers from which six were chosen to be considered in greater detail when the Committee met next, in February. Mr. Myrah was also asked to investigate the possibility of transferring a portion of the Putnam EAFE funds to the existing Brandes Global account so that the Fund might benefit from that firm's positive performance record and its value style.

The last meeting of the fiscal year was held in Portland on February 16th. Mr. John Myrah of Hewitt and Associates was instructed to contact a final shortlist of 4 value oriented style managers for interview at the end of March 2005 by an investment manager selection sub-committee of the Joint Committee. The sub-committee was struck with a balance of US and Canadian members from the Northern and Southern Fund Committees. Mr. Myrah also reported that it would be possible to increase the Fund's Brandes Global equities mandate with a portion of the Putnam holdings because the Funds investments with that firm had not yet reached a maximum threshold limiting further investment. A motion instructing staff to effect this structural change was passed. Mr. Myrah recommended that the Fund's Investment Policy be brought up to date following the series of structural changes that had recently taken place. He agreed to present a draft update at the Committees next meeting in May.

Activities of the Panels

PART III

ACTIVITIES OF THE PANELS

A. FRASER RIVER PANEL

The Fraser River Panel completed the 2004 fishery management plan for Fraser River sockeye and pink salmon in Panel Area waters on May 20, 2004. The Panel carried out its in-season fishery management responsibilities as per Annex IV, Chapter 4. Commission staff conducted its regular in-season assessment programs and reported results to the Panel.

The Panel met in bilateral session during the January and February 2005 meetings of the Commission to review the results of the 2004 fishing season, to receive reports from Canada on spawning escapements and to discuss issues of concern for the 2005 fishing season. Commission staff reviewed the concerns regarding the potential for continued early upstream migration behaviour of Late-run sockeye and identified specific areas of fishery impacts.

B. NORTHERN PANEL

The bilateral Northern Panel met in January 2005 and reviewed 2004 treaty-related fisheries of both parties. The panel received reports for the Northern Boundary area fisheries from fishery managers of both parties, as well as a presentation by DFO personnel on the 2005 sockeye salmon forecasts for the Nass and Skeena Rivers.

A report from the Northern Boundary Technical Committee on the run reconstruction for 2002 and 2003, including the status of current overages and underages, was scheduled for the February session.

Initial discussions were held on the Northern Fund Committee's request for priorities for 2006 projects.

In February, 2005, the bilateral Northern Panel again met and reviewed the northern boundary area sockeye reconstructions for 2002 and 2003. This review included the allowable and actual harvests of salmon, as specified in Annex IV, Chapter 2.

The panel also reviewed a technical report on scale analysis compared to DNA analysis, with the broad conclusion that, although DNA appears to be more accurate, there is not enough difference to warrant concern for past years' data.

The panel continued to discuss priorities for the 2006 Northern Fund project solicitation.

C. SOUTHERN PANEL

The Southern Panel met in bilateral session during the January and February 2005 meetings of the Commission. The Panel's agenda for these sessions was defined by the 2004-2005 Southern Panel work plan:

Post-Season Review: The Panel conducted a detailed review of the 2004 coho, chinook and chum returns, fishery performance, special conservation actions and escapement levels, working with members of the Coho, Chinook and Chum Technical Committees.

Chum: The Panel discussed conduct of the 2004 chum fisheries managed under the approach agreed upon during the 2004 bilateral sessions. The Panel agreed to continue under the tentative plan agreement for the 2005 season, with a review of the successfulness of the plan to be conducted after the 2005 chum fishery. Providing this plan is deemed successful there is an objective of incorporating the plan into Treaty language during the 2006 bilateral session. The Southern Panel instructed the Chum Technical Committee Co-chairs to continue to develop the technical components of the plan with that purpose in mind.

Chinook: The Panel discussed implications of fishing pattern changes in the WCVI troll fishery on southern chinook stocks, with a view toward improving US pre-season fishery effectiveness. The Panel involved Co-chairs and members of the Chinook Technical Committee in these discussions and Canada made a presentation related to the subject describing recent management of the WCVI chinook fishery using DNA sampling, providing comparisons with CWT-based estimates of stock composition from fishery simulation models. Canada's sampling program was discussed, including changes to CWT sampling/recovery affecting programs relying on DIT tags (unclipped, tagged fish).

Coho: The Panel had a goal of putting more emphasis on the issues surrounding the implementation of the Southern Coho Management Plan. The Panel discussed status of work defined by the Coho Technical Committee's Work Plan, focusing on priority obligations for successful implementation of the Southern Coho Management Plan. Presentations by the Coho TC informed the Southern Panel of the status of work plan tasks, including work to upgrade the Coho FRAM and related work being conducted as projects supported by the Southern Endowment Fund. The Panel anticipated at least one meeting of the Coho Working Group late in the summer or early fall of 2005 to discuss progress on this matter.

Enhancement report: The Panel discussed the utility of the annual Enhancement Report and provided recommendations to the Commission for improvements to make the report more useful.

Southern Endowment Fund: In the February meeting the Panel discussed and submitted a paper to the Southern Endowment Fund Committee regarding the Southern Panel priorities for this fund.

D. TRANSBOUNDARY PANEL

The Transboundary Panel met extensively in bilateral session during the January and February 2005 meetings of the Commission. During bilateral sessions, the panel received several reports by staff of the Alaska Department of Fish and Game and the Canadian Department of Fisheries and Oceans concerning fisheries that took place in both countries in 2004. The panel also received several special reports including: (1) a report concerning the U.S. Stikine subsistence fishery, (2) a report concerning northern fund activities, (3) a report concerning assessment of Trapper Lake access, and (4) a report concerning a conceptual process for review of Transboundary enhancement activities. The panel worked on developing a draft document concerning recommended priorities for northern fund proposals.

Substantial time was spent by the Transboundary Panel developing and exchanging positions and draft annex language for implementing new directed Chinook fisheries in the Taku, Stikine, and Alsek Rivers. Substantial progress toward development of bilaterally agreed upon language was made during the January meeting. However, at the end of that week, catch sharing was still an outstanding issue as were some of the specifics associated with escapement goals, more specifically when point escapement

goal estimates, escapement goal ranges, and mid-points of escapement goal ranges would be used in the new fishery management regimes.

The Transboundary Panel quickly followed up on the progress made in January toward development of new directed Chinook fisheries during the February meeting. An exchange of positions and draft annex language coupled with bilateral discussion led to bilaterally agreed upon annex language. The agreed upon abundance based fishery management regime included algorithms for calculating total allowable harvest of Chinook in Taku and Stikine fisheries, catch sharing agreements for Taku and Stikine fisheries and implementation of a test fishery for Chinook in the Alsek River. Panel members worked long hours, both sides made considerable concessions as they strived to reach agreement, and the Transboundary Panel was fully successful in developing an extensive revision of the Transboundary Annex.

Review of 2004 Fisheries and Treaty-Related Performance

PART IV

REVIEW OF 2004 FISHERIES AND TREATY-RELATED PERFORMANCE

The following review has been drawn from a number of reports prepared by Commission staff, joint technical committees, and domestic agencies for presentation to the Commission. Source documents are referenced for each part of this review. All figures are preliminary and will be updated in future reports as more complete tabulations become available.

A. FRASER RIVER SOCKEYE SALMON

On February 17, 2005, the Panel agreed on a revised Chapter 4, Annex IV of the Pacific Salmon Treaty. The revised annex did not change the sharing arrangements of the Parties; the United States sockeye catch in Panel Areas (Washington) shall not exceed 16.5% of the Total Allowable Catch (TAC). However, the Agreement established new methods for making management decisions, and for calculating the TAC from 2005 through 2010. In a subsequent Agreement, the Panel decided to apply the new method for calculating the TAC to 2002, 2003, and 2004. Whereas the traditional TAC method used post-season estimates of run size, spawning escapement and test fishing catch in the calculation, the new method uses the estimates of run size, spawning escapement target, management adjustment and test fishing catch that were in effect when the Panel relinquished control of the last U.S. Panel Area (October 2 in 2004). The new method is therefore based on in-season data rather than post-season data to calculate the total sockeye available for sharing. In the context of assessing the achievement of objectives, this premise is applied not only to the achievement of the TAC and catch allocation targets, but also to the achievement of gross and spawning escapement targets.

Prior to the fishing season, the Panel recommended a fishery regime and management plan for Panel Area fisheries to the Pacific Salmon Commission. The plan was based on forecasts of abundance and timing, and escapement targets for Fraser River sockeye salmon as provided by Canada. Fishing schedules in the plan were also based on international allocation goals set in the Agreement, domestic allocation goals set by each country, management concerns for other stocks and species identified by each country, and historic migration patterns.

Panel Area fisheries in Canada and the United States were managed by the Fraser River Panel and Canadian fisheries outside the Panel Area were to be managed by Canada in a manner that anticipated and accommodated catches in United States fisheries and achieved domestic allocation goals.

Canada provided the Panel with run-size forecasts on February 10, 2004 at the following probability levels: 25%, 50%, 75%, 80% and 90%. Rules for calculating spawning escapement targets for Fraser River sockeye salmon were provided to the Panel on April 21, 2004. At the 50% probability level forecasts of abundance, the proposed escapement targets by run-timing group were: Early Stuart - 90,000 fish (interim goal 200,000 fish); Early Summer-run - 399,000 fish (interim goal 399,000 fish); Summer-run - 1,424,000 fish (interim goal 1,424,000 fish), Birkenhead - 89,000 fish (interim goal 300,000 fish); and the escapement target for true Late-run sockeye (Adams, Lower Shuswap, Portage, Weaver, Harrison and Cultus stocks) was to be determined at a later date (interim goal 364,000 fish). The projected Total Allowable Catches (TAC) at the 50% probability level forecasts of abundance (Early Stuart at the 75% probability level forecast) was 2,170,500 fish.

On May 19 and 20, 2004, the Panel developed fishery plans for forecast run sizes at the 25%, 50%, and 75% probability levels, which were 8,663,000, 4,920,000 and 2,872,000 sockeye, respectively.

Domestic allocation goals in Washington were as follows: Treaty Indian fishers were to receive 67.7% of the United States TAC, while Non-Indian fishers were allocated the remaining 32.3% of the United States TAC. Among Treaty Indians, fishers in Areas 4B, 5 and 6C were allocated a minimum of 12.5% of the Treaty Indian share. The allocation targets among Non-Indian fishers were 54% for purse seines, 41% for gillnets and 5% for reefnets, as in recent years.

The commercial share of the Canadian TAC was 1,188,000 fish. The sharing arrangements among commercial fishers were as follows: 53.5% for Area B purse seines; 11.5% for Area D gillnets; 24% for Area E gillnets; and 11% for Area H trollers.

The Management Plan focused on the harvest of Summer-run sockeye. Fishery restrictions were anticipated early in the season to minimize harvest impacts on Early Stuart and Early Summer-run sockeye and late in the season to protect true Late-run sockeye. A 15% exploitation rate limit for true Late-run sockeye was adopted by the Panel due to their probable early river entry and associated high mortality rate. Several Fraser River and non-Fraser River chinook, chum, coho, and steelhead stocks were identified by each country as warranting conservation concerns.

Research studies were conducted to help determine the cause(s) of early river-entry behaviour of Late-run sockeye. This research included tagging, physiology oceanography and other studies.

The forecast of the diversion rate of Fraser River sockeye through Johnstone Strait was 78%. The run-timing forecasts (50% cumulative migration date through Canadian Area 20 - Juan de Fuca Strait) were June 29 for Early Stuart sockeye and August 6 for Chilko sockeye.

Catches of Fraser River sockeye salmon in all fisheries totalled 2,339,000 fish. Canadian catches totalled 2,007,000 sockeye, United States catches totalled 259,000 fish (all commercial catch), and test fishery catches totalled 74,000 sockeye. Canadian sockeye catches were comprised of commercial catches of 1,058,000 fish; First Nations' catches of 891,000 fish; recreational catches of 55,000 fish; and 4,000 Weaver Creek sockeye were caught in an ESSR (excess salmon to spawning requirements) fishery. The sum of commercial fishery catches in both countries was 1,317,000 fish.

The Stock Monitoring Program provided in-season estimates of abundance, migration timing and diversion rate of Fraser River sockeye salmon throughout the fishing season. Peak migration timing through Area 20 was estimated to be July 6 for Early Stuart sockeye (three days later than expected); July 27 for Early Summer-run sockeye (three days later than expected); August 1 for Summer-run sockeye (five days earlier than expected); and August 8 for Late-run sockeye (six days earlier than expected). The overall diversion rate of Fraser sockeye through Johnstone Strait in 2004 was estimated at 70%.

The Racial Identification Program provided estimates of stock composition for commercial, First Nations and test fishery catches. DNA data, scale characteristics, and length data were employed to estimate stock proportions. These stock proportion estimates were then used to estimate the run size and gross escapement of individual stock groups. Results of DNA analyses were primarily used in 2004 due to the high accuracy of this stock identification methodology.

Post-season estimates of total adult abundance by run-timing group were 137,000 Early Stuart, 1,240,000 Early Summer-run, 2,381,000 Summer-run and 425,000 Late-run adults.

for a total of 4,183,000 adult Fraser sockeye. The abundance of Early Stuart and Summer-run sockeye was 37% and 33% lower, respectively, than the 50% probability level forecasts, while the abundance of Early Summer-run and Late-run sockeye was 40% and 34% higher, respectively, than forecast. Overall, the estimated return was 15% lower than the forecast of 4,920,000 adults at the 50% probability level. Among Early Summer-run stocks, the Nadina/Gates/Chilliwack stock-group dominated the run. Among the Summer-run stocks, Late Stuart/Stellako sockeye comprised the largest portion of the production. The largest Late-run return was to Weaver/Harrison stocks.

The final in-season catch estimate of 21,000 true Late-run sockeye was 2,000 fish higher than the 15% harvest rate limit of 19,000 fish.

Near-final estimates of spawning escapements to enumerated streams in the Fraser River watershed totalled 524,000 adult sockeye. This escapement was the third smallest escapement on this cycle since 1940 and only 22% of the brood year (2000) escapement. Spawning escapement estimates were much lower than the brood year for Early Stuart (-90%), Early Summer-run (-74%) and Summer-run (-84%) sockeye. The latter portion of the Early Stuart run as well as the migrations of Early Summer-run and Summer-run sockeye in the Fraser River were exposed to very high (and during some periods, record-high) water temperatures. The escapement of Late-run sockeye was estimated at 92,000 fish, which was double the brood year escapement but only 60% of the long-term average escapement. The success of spawning by female sockeye in the entire watershed in 2004 averaged 98%.

Upriver estimates of spawning escapement were below the targets for all run-timing groups: Early Stuart - 81,000 fish, Early Summer-run - 392,000 fish, Summer-run - 1,152,000 fish, Birkenhead - 21,000 fish and Late-run sockeye - 80,000 fish, for a total of 1,726,000 fish or 77% below the spawning escapement target.

Adjusted gross escapement targets (target + management adjustment) for sockeye salmon were generally not achieved for the run-timing groups based on lower river estimates (in-season Mission escapement plus First Nations' catch below Mission). The adjusted gross escapement targets by run-timing group were: Early Stuart - 1,000 fish under, Early Summer-run - 66,000 fish under, Summer-run - 1,099,000 fish under, Birkenhead - 13,000 fish over and true Late-run sockeye - 1,000 fish under. The summed gross escapements were 1,154,000 fish or 29% less than the adjusted target. The large underage in the Summer-run gross escapement resulted from reductions in the TAC due to decreases in Summer-run sockeye abundance estimates and increases in management adjustments that occurred after most fisheries were conducted.

Upriver estimates of gross escapement were below the targets for all run-timing groups: Early Stuart - 117,000 fish under, Early Summer-run - 397,000 fish under, Summer-run - 1,254,000 fish under, Birkenhead - 25,000 fish under and true Late-run sockeye - 64,000 fish under, for a total of 1,858,000 fish or 61% below the gross escapement target. The broad underage in the achievement of gross escapement targets was primarily due to the impact of record high Fraser River temperatures (up to 21.5°C) and the record duration of severely high temperatures (e.g., 38 days > 19°C, 30 days > 19.5°C, 16 days > 20°C) on the success of upriver migration. For Late-run sockeye, which again migrated into the Fraser River much earlier than normal (50% Mission date was August 20, second earliest on record and tied with 2001), the underage in achieving the gross escapement target was likely due to the impact of early migration on their migration success, which may have been exacerbated by the high river temperatures.

Adjusted spawning escapement targets were exceeded for Early Stuart (31,000 fish over) and Birkenhead sockeye (12,000 fish over), but not achieved for Early Summer-run (60,000 fish under) and Summer-run sockeye (990,000 fish under). The in-season

spawning escapement estimate for true Late-run sockeye was very close to the target (3,000 fish under). Summed spawning escapements were less than the target by 1,010,000 fish or 32%.

The final in-season run size estimate of 4,438,000 Fraser sockeye minus the deductions for spawning escapement, management adjustments, Fraser River Aboriginal Exemption and test fishing catch resulted in a TAC of 775,000 sockeye in 2004. Washington's share was 128,000 sockeye (16.5% of the TAC). Subtracting the Washington catch of 196,000 fish from this share leaves a catch overage of 68,000 sockeye. Canadian fishers caught 1,603,000 sockeye (excluding the Fraser River Aboriginal Exemption of 400,000 sockeye and an ESSR catch of 4,000), leaving a catch overage of 956,000 sockeye.

In the United States, Treaty Indian fishers caught 18,000 fish less than their target of 132,000 fish, while Non-Indian fishers caught 18,000 fish over their target of 63,000 fish. Within the Non-Indian group, purse seines and gillnets caught 9,000 and 4,000 fewer fish than the targets, respectively, while reefnets caught 13,000 fish more than their target.

In Canada, Area B purse seines were 42,000 fish under, Area D gillnets were 33,000 fish over, Area E gillnets were 8,000 fish under and Area H trollers were 17,000 fish over their respective allocations of Fraser sockeye.

Panel Area fisheries resulted in moderate by-catches of other species and stocks that were identified as conservation concerns by the Parties in 2004. The catch of 13,200 chinook salmon was taken by Canadian and United States fishers, while the catch of 6,400 coho was harvested by the United States.

By Panel agreement, no paybacks were carried forward from 2003 to 2004, and no new paybacks were to be carried forward from 2004 to 2005, so the allocation status for Fraser River sockeye and pink salmon is zero.

B. 2004 POST-SEASON REPORT FOR CANADIAN TREATY LIMIT FISHERIES

Fisheries in 2004 were conducted according to Annex IV arrangements under the Pacific Salmon Treaty that was agreed to between Canada and the United States in June, 1999. The conservation-based approach commits the two Parties to abundance-based management for all stocks covered by the Treaty.

Catches reported below provide the best information available to date, and may change when all catch information for 2004 has been received. The catches are based on in-season estimates (hailed statistics), on-the-grounds counts by Fisheries and Oceans Canada management staff and independent observers, logbooks, dockside tallies, and landing slips (aboriginal fisheries), fish slip data (commercial troll and net), and creel surveys, logbooks and observers (sport and commercial).

Annex fisheries are reported in the order of the Chapters of Annex IV. Comments begin with expectations and management objectives, followed by catch results by species, and where available and appropriate, escapements. The expectations, management objectives, catches and escapements are only for those stocks and fisheries covered by the Pacific Salmon Treaty (PST); domestic catch allocations have been excluded. A table attached at the end of this report summarizes 1994-2004 catches in Canadian fisheries that have at some time been under limits imposed by the Pacific Salmon Treaty.

Transboundary Rivers

Stikine River

Canada developed a fishing plan for the Stikine River based on the catch sharing arrangements outlined in Annex IV, Chapter 1, Paragraph 3 of the PST. Accordingly, the 2004 management plan was designed to meet agreed escapement targets and the following harvest objectives: to harvest 50% of the total allowable catch (TAC) of Stikine River sockeye salmon in existing fisheries; to allow additional harvesting opportunities for enhanced stocks in terminal areas to target sockeye salmon that were surplus to spawning requirements; to harvest 4,000 coho salmon in a directed coho salmon fishery; and, to allow chinook salmon to be taken in the commercial fishery only as an incidental catch in the directed fishery for sockeye salmon. The 2004 season opened on 20 June, statistical week (SW) 26, and ended in SW37 (05 September). Commercial gear consisted of one net; however, the lower Stikine River commercial fishing area was expanded upstream to near the Scud River once inseason assessments confirmed strong sockeye run abundance.

Sockeye salmon

The pre-season forecast of Stikine sockeye salmon, as provided by the Canada/US Technical Committee for the Transboundary Rivers (TCR), was for a terminal run size¹ of 289,500 fish, including 217,300 Tahltan Lake origin sockeye salmon (112,300 wild and 105,000 enhanced), 21,400 enhanced Tuya Lake sockeye, and 50,900 non-Tahltan wild sockeye salmon. For comparison, the previous 10-year (1993-2002) average terminal run size was approximately 183,000 fish.

Preliminary combined catches from the Canadian commercial and aboriginal gillnet fisheries in the Stikine River in 2004 included: 3,857 large chinook, 2,574 jack chinook, 84,866 sockeye, 275 coho, 8 pink, and 133 chum salmon. In addition to these catches, 1,675 sockeye salmon were taken in a terminal fishery located at the mouth of the Tuya River. Catches of large and jack chinook, sockeye, and chum salmon were above average. The catch of 3,857 large chinook salmon was 69% above the 1994-2003 average of 2,280 fish. The catch of 2,574 jack chinook was over 400% above the 1994-2003 average of 597 fish. The catch of 84,866 sockeye salmon was 88.8% above the 1994-2003 average of 44,941 fish, while the catch of 133 chum salmon was 5.8% above the 1994-2003 average of 126 fish. The coho and pink salmon catches of 275 and 8 fish, respectively, were 73% and 95% below their respective ten-year averages. The preliminary estimate of the total contribution of sockeye salmon from the Canada/U.S. fry-planting program to the combined Canadian aboriginal and commercial fisheries is 22,594 fish, 26.6% of the catch.

A total of 63,373 sockeye salmon was counted through the Tahltan Lake weir in 2004; 135% above the 1994-2003 average of 26,963 fish. The 2004 count was the second highest count on record (record count 67,326 in 1985) and was approximately 47.3% above the upper end of the escapement goal range of 18,000 to 30,000 fish. An estimated 25,333 fish (40.0%) originated from the fry-planting program, which is close to the 43.7% contribution of smolts observed in 2001, the principal cycle year contributing to the 2004 return. The estimate of planted fish in 2004 was based on the proportion of

¹ terminal run excludes allowances for U.S. interceptions that occur outside of the District 108 and 106 gillnet fisheries.

thermally marked otoliths from samples collected in the lower Stikine River commercial fishery. (Site specific analyses from samples collected at the Tahltan Lake weir and from brood stock is not yet available.) A total of 420 sockeye salmon were sacrificed at the weir for stock composition analysis. In addition, a total of 4,423 sockeye salmon was collected for broodstock, resulting in a spawning escapement of 58,710 sockeye salmon in Tahltan Lake.

The spawning escapements for the non-Tahltan and the Tuya stock groups are calculated using stock ID, test fishery and in-river catch data. The preliminary escapement estimates are 30,125 non-Tahltan and 2,920 Tuya sockeye salmon. The existence of enhanced Tuya escapement continues to be a serious concern because of straying² and potential associated impacts to wild spawning stocks. (A study on the behavior of Tuya strays was conducted in August and September, 2004. A report on the program findings is due in November, 2005.) The non-Tahltan spawning escapement estimate is 7.7% below the recent 10 year average and close to the mid-point of the escapement goal range of 20,000 to 40,000 fish. Aerial survey counts of non-Tahltan sockeye also indicated a below average return. The index count of only 648 fish was 42.2% below the 1994-03 average of 956 fish. However, survey conditions were rated as only fair.

Based on the in-river run reconstruction of the Tahltan Lake run expanded by run timing and stock ID data in the lower river and estimated harvests of Stikine sockeye in US terminal gillnet fisheries, the preliminary post-season estimate of the terminal sockeye run size is approximately 297,786 fish. This estimate includes 209,010 Tahltan Lake sockeye, 11,924 Tuya Lake sockeye, and 76,852 sockeye of the non-Tahltan stock aggregate. A Stikine run size of this magnitude is 65.5% above the 1994-2003 average terminal run size of 179,928 sockeye salmon. The preliminary post-season estimate of the Canadian TAC for 2004 is approximately 121,183 sockeye, well above the actual catch of 84,886 sockeye.

In-season management was influenced significantly by run size projections derived from the Stikine Management Model (SMM), which was updated and refined by the TCTR prior to the season. The model is based on the historical relationship between cumulative catch per unit effort (CPUE) and run size and provides three sets³ of independently generated projections: one set based on US District 106 CPUE; another based on Canadian in-river commercial CPUE; and the third, based on Canadian test fishery CPUE. Since the model predictions derived from the test fishery data in 2000- 2003 were the closest to respective post season estimates of run size, the TCTR gave priority to the run projections derived from test fishery data for management purposes in 2004. The TCTR was compelled to use commercial fishery catch data for SMM projections commencing in week 28 due to extremely high sockeye returns which resulted in extended commercial fishing periods. (The commercial fishery was opened for 18 consecutive days in July; as per the operational plan, the test fishery did not fish during this extended commercial fishery.)

² Straying of Tuya sockeye has been confirmed using radio telemetry and sampling for thermal marks.

³ Each set of projections includes predictions of the terminal run size of all Stikine sockeye, the Tahltan stock, the Tuya stock and the mainstem stock conglomerate.

The in-season projections ranged from 207,986 fish in SW28 (04-10 July) to 308,909 fish in SW34 (15-21 August). The final SMM projection indicated a terminal run size of approximately 308,909 sockeye and a TAC for Canada of approximately 125,840 sockeye. According to this projection, the Canadian catch was well below the treaty entitlement.

The sockeye mark-recapture program initiated in 2000 continued in 2004. The primary objectives of this programme are to provide an estimate of abundance independent from the SMM and to examine the feasibility of developing an alternate abundance-based management tool for Stikine sockeye if required. The preliminary mark-recapture estimate of the total in-river run size is approximately 239,000 sockeye salmon. This estimate is 31% above the in-river run estimate of 183,000 sockeye based on the traditional method of reconstructing the in-river Tahltan run then expanding it using stock ID and run timing data. Further analyses are required to: a) determine which estimate should be used as the final post season estimate; and b) to compare the performance of the mark-recapture projections vs. those of the SMM. To obtain information about relative distribution, migratory behaviour and stock-specific timing, a joint sockeye radio telemetry project was undertaken with ADF&G in 2004; analyses are still in progress.

Coho salmon

Poor prices in concert with the relatively low coho salmon quota of 4,000 fish resulted in a catch of only 272 coho, 73% below the 1994-2003 average of 1,031 coho salmon. All but one of the coho harvested were taken in the lower Stikine commercial fishery.

The cumulative weekly CPUE of 5.83 observed in the coho test fishery was 42% above the recent 10 year average. Aerial surveys of two principal index sites did not follow suit with a combined count approximately 27% below the recent 10 year average. However, surveys were conducted under only fair conditions.

Chinook salmon

The total combined gillnet catch of chinook salmon in the aboriginal and commercial fisheries included 3,857 large chinook and 2,574 jacks compared to 1994-2003 averages of 2,281 large chinook and 597 jacks. The count of 16,381 large chinook salmon through the Little Tahltan River weir was a record high count and close to three times 1994-2003 average of 5,981 fish. The count was 194% above the upper end of the escapement goal range of 2,700 to 5,300 chinook salmon. The weir count of 221 jack chinook salmon was close to the previous 10-year average of 250 fish. Results from the Stikine River chinook mark-recapture program are not yet available; however, based on the 1996-2003 average contribution of Little Tahltan chinook to the total in-river escapement, i.e. 18.6%, a preliminary estimate of the total Stikine River spawning escapement is 88,100 large fish. This estimate is close to four times the upper end of the system-wide escapement goal range of 14,000 to 28,000 Stikine chinook salmon established by the TCTR.

Joint sockeye enhancement

Joint Canada/U.S. enhancement activities continued with approximately 6.2 million sockeye eggs collected at Tahltan Lake in the fall of 2004. Because peak spawning of Tahltan Lake sockeye was late, the egg take crew was forced to remain fishing 10 days longer than was scheduled. The crew fished beyond the 25 September termination date as established by the

TRTC. The termination date was established to allow time for undisturbed spawning of wild stocks.

Approximately 2.23 million fry were out-planted into Tahltan Lake in early to late May 2004. The fry originated from the 2003 egg-take at Tahltan Lake and were mass-marked in the hatchery with thermally induced otolith marks. For the second time in four consecutive years, sockeye fry originating from the Tahltan Lake egg take were released into Tuya Lake. A total of 2.44 million fry were released in mid June.

Approximately 2.1 million sockeye salmon smolts were enumerated emigrating from Tahltan Lake in 2004, 91% above the 1994-2003 average smolt count of approximately 1.1 million smolts. The contribution of hatchery origin fish is currently being analyzed and is not yet available.

To address problems associated with fish capture in the lower Tuya River, plans had been previously developed to install a fishway/trapping apparatus and a flow diversion structure. The fishway, which was to include a fish trap, was intended to increase the terminal harvest capability for enhanced Tuya sockeye salmon while still allowing indigenous species to bypass the capture site. Because of concerns about inherent dangers of blasting at the fishing site (situated in a steep canyon with active slopes), in tandem with cost factors associated with the blasting, purchase and installation of a steep-pass fish ladder, in August 2002 it was decided to defer the fishway component of the project. Plans are still being considered to improve fish harvesting capability, either through the use of a fishway as originally conceived, or through other fishing techniques.

In April 2004, a flow diversion weir to protect the fishing site from high water events was successfully installed. The structure served to aid in improving the fishing conditions at Tuya during high water events.

PSC Northern Fund funding was provided in 2004 to address harvest and fish straying issues in the Tuya River. A steering committee, consisting of Canadian and US engineers and others, was established to examine potential fishing sites and investigate the purchase, installation, and maintenance of a fish capture system upstream from the mouth of the Tuya River. The committee has yet to decide on an appropriate system, but is considering the installation of a "floating weir" and trap system. The committee has met monthly since July 2004 and will continue to meet through 2005. The Tuya straying study is currently in progress with a final report expected in the fall of 2005.

Taku River

As with the Stikine River, the fishing plan developed by Canada for the Taku River was based on the arrangements in Annex IV, Chapter 1, Paragraph 3 of the Pacific Salmon Treaty. Accordingly, the plan addressed conservation requirements and contained the following harvest objectives: to harvest 18% of the TAC of wild Taku River sockeye salmon plus up to 20% of the projected sockeye escapement in excess of 100,000 fish; to attain a 50% share of the catch of enhanced Taku River sockeye; to harvest 3,000 to 10,000 coho salmon, depending on in-river run size projections, in a directed coho fishery; and to allow commercial chinook catches to be taken only incidentally in the directed sockeye fishery. The plan also contained mid-season fishery restrictions to address conservation concerns associated with Tatsamenie sockeye. The 2004 season opened on 20 June, SW26, and ended in SW36 (week ending Sept 04).

Sockeye salmon

The Canadian pre-season run outlook was for a total sockeye run of 231,000 sockeye, approximately 13% below the previous 10-year average total run size of 265,000 sockeye.

The 2004 Canadian sockeye catch totalled 20,010 sockeye, 19,860 of which were caught in the commercial fishery and the remainder in the aboriginal fishery. The commercial catch was 32% below the 1994-2003 average of 29,337 sockeye. Enhanced sockeye returns were expected to be low; the preliminary estimate of the contribution of sockeye salmon from the Canada/U.S. enhancement program to Canadian fisheries is only 267 fish. The estimated total spawning escapement of 101,205 sockeye salmon in the Canadian section of the Taku River is 35% above the mid-point of the interim escapement goal range of 71,000 to 80,000 fish and is approximately equal to the 1994-2003 average of 104,845 sockeye. Based on weir counts, escapements to the Little Trapper, Tatsamenie and Kuthai lake systems were 9,163, 1,951 and 1,578 sockeye, respectively. The Little Trapper escapement estimate was 25% below the 1994-2003 average, whereas, the Tatsamenie count was 75% below average. The Kuthai Lake count was 70% below the 1994-2003 average. In addition, the Taku River Tlingit fishery program conducted a new enumeration project at King Salmon Lake where 5,005 sockeye were counted.

Projections of the total sockeye run size, TAC, and total escapement were made frequently throughout the fishing season. The estimates were based on the joint Canada/U.S. mark-recapture program, the estimated interception of Taku River sockeye in U.S. fisheries, the catch in the Canadian in-river fishery, and historical run timing information. The final in-season run projection indicated a total run of approximately 210,728 sockeye and a total spawning escapement of approximately 102,964 sockeye. The preliminary post season estimate of terminal run size is approximately 197,822 wild sockeye with a TAC of 117,822 to 126,822 sockeye. Preliminary analysis indicates that the Canadian sockeye catch represented 15.6-16.8% of the TAC. The preliminary estimate of the total Canadian and US combined harvest of enhanced Taku sockeye salmon is approximately 943 fish of which Canada harvested 28%.

Coho salmon

The commercial catch of 5,954 coho salmon was approximately equal to the 1994-2003 average catch of 6,129 coho salmon. Of the commercial coho catch, approximately 3,610 fish were taken in the directed coho fishery, i.e. after SW33. Approximately 450 coho were taken in the aboriginal fishery. The coho test fishery, which started in SW36, harvested 3,278 coho. Preliminary mark-recapture data indicated a spawning escapement of 134,288 coho salmon in 2004. This estimate is 46% above the previous 10-year average of 91,696 fish, and several times the interim escapement goal of 27,500 – 35,000 fish. The preliminary estimate of the total in-river run into the Canadian section of the drainage was 143,970 coho. The spawning escapement and in-river run estimates may be expanded slightly if it is determined that the mark-recapture study did not cover the entire run. According to the PST harvest arrangements for Taku coho salmon, Canadian fishers were entitled to harvest up to 10,000 coho salmon at a run size of this magnitude. Market conditions improved slightly in 2004 resulting in more commercial fishing effort than was seen last year.

Chinook salmon

The commercial catch of 2,074 large chinook was 13% below the 1994-2003 average of 1,839 fish; whereas, the catch of 334 chinook jacks was 161% above the 1994-2003 average of 208 fish. Chinook escapement counts were average to above average in the six Taku River aerial index areas surveyed. The combined six-stream index count of 10,041 fish was

14% above the previous 10-year average of 8,817 chinook. Preliminary estimates derived from the joint Canada/US chinook mark-recapture program indicate a total spawning escapement of approximately 66,200 large chinook salmon, above the upper end of the escapement goal range of 30,000 to 55,000 large chinook salmon.

Joint sockeye enhancement

Joint Canada/US enhancement activities at Tatsamenie Lake continued in 2004 and an estimated 875,000 viable eggs were delivered to the Snettisham Hatchery in Alaska for incubation and thermal marking. As in 2003, the egg collection did not meet the target of 5.0 million eggs due to below-average escapement to Tatsamenie Lake. For the same reason, the experimental passive flow incubators within Tatsamenie Lake were not stocked in 2004. The in-lake incubation project, which was initiated on a small scale in 1998, is part of ongoing investigations into techniques that may increase fry-to-smolt survivals of the outplanted enhanced fry which have been well below expectations.

In May 2003, approximately 2,141,000 fry were transported from Snettisham Hatchery to Tatsamenie Lake in four shipments. The green egg-to-fry survival was approximately 87%; IHNV was not a problem this year. Approximately one half of the fry were released immediately; the other half was held over night and then released unfed.

The 2004 Tatsamenie Lake sockeye smolt out-migration was estimated to be approximately 238,400 fish. The enhanced contribution will be determined pending results of thermal mark analysis.

Alsek River

Although catch sharing of Alsek salmon stocks between Canada and the U.S. has not been specified, Annex IV of the PST does call for a co-operative development of abundance-based management regimes for Alsek chinook, sockeye and coho stocks. Instead of managing to system-wide goals, which for the most part have been as yet unverifiable, the TCTR has established index goals for the Klukshu River stocks. Historically, the principal escapement-monitoring tool for chinook, sockeye and coho salmon stocks in the Alsek drainage has been the Klukshu River weir, operated by Fisheries and Oceans Canada and the Champagne-Aishihik First Nation. The Klukshu River is a tributary to the Tatshenshini River, which is the major salmon producing river system of the Alsek drainage.

Based on joint stock-recruitment analyses conducted on Klukshu chinook and sockeye salmon, Canadian and U.S. managers agreed to a minimum escapement goal of 1,100 Klukshu chinook salmon and an escapement goal range of 7,500 to 15,000 for Klukshu sockeye salmon for the 2004 season. An escapement goal for Klukshu coho salmon has not yet been developed.

Highlights of the 2004 season included above average returns of both chinook and sockeye salmon. A total of 128 chinook salmon was harvested in the aboriginal fishery, which was 55% below the 10-year average (1994-2003) of 235 fish. The aboriginal fishery harvested an estimated 1,875 sockeye salmon, which was 43% higher than the 10-year average (1994-2003) of 1,313 fish. No coho salmon were harvested in the aboriginal fishery.

Despite an increase in the daily chinook catch limit from one to two on July 20th, recreational fishers harvested only 46 chinook, which is 85% below the 10-year average. The sockeye catch was well above average and amounted to 247 retained and 34 live-released. Due to the projected surplus of late-run sockeye, the daily catch limit was increased from two to four beginning on September 11th. A total of 127 coho salmon was kept and an additional 3 were

released. Recreational catches have been adversely affected in recent years by significant changes in river channelisation.

The Klukshu weir count of 2,525 chinook salmon was 95% of the previous 10-year (1994-2003) average of 2,672 fish. The estimated spawning escapement of 2,462 chinook salmon above the weir achieved the minimum escapement goal of 1,100 Klukshu chinook salmon. The weir count and total escapement of Klukshu River sockeye salmon was 15,348 and 13,764 fish, respectively. The early-run count of 3,464 sockeye was 13% higher than the previous 10-year (1994-2003) average of 3,070 fish; however, the late-run count of 11,884 fish was 99% of the previous 10-year average of 11,973 sockeye salmon. The overall spawning escapement of 13,764 sockeye salmon in the Klukshu River was near the upper end of the escapement goal range (7,500 – 15,000). A near average sockeye escapement was recorded in the neighbouring tributary of Village Creek where an electronic counter recorded an estimated 2,278 sockeye, 85% of the 10-year average.

The Klukshu weir count of 750 coho salmon was 23% of the previous 10-year average of 3,221 fish. The weir is removed prior to the completion of the coho return due to icing conditions and generally does not include fish that migrate after mid-October. In 2004, the weir was pulled on October 13th.

Several projects were continued in 2004 to collect background data for use in developing abundance-based management regimes for chinook and sockeye salmon. These included mark-recapture programs to estimate the escapement of chinook and sockeye in the Alsek drainage. Preliminary results of the sockeye mark-recapture program indicated an in-river run size upstream of the US Dry Bay fishery of 56,933 fish (the Dry Bay fishery caught an additional 17,500 sockeye).

Northern British Columbia Pink Salmon

Areas 3-1 to 3-4 Pink Net Catch

For the year 2004, Canada was to manage the 3-1 to 3-4 net fishery to achieve an annual catch share of 2.49 percent of the annual allowable harvest (AAH) of Alaskan Districts 101, 102 and 103 pink salmon.

In the Canadian northern boundary area, average pink salmon returns were anticipated for Area 3 (2 million) and for Area 4 (2.5 million). Actual Area 3 returns were above average while the abundance of Area 4 pinks was less than anticipated, with a weaker than expected showing from the late component. As has been the case for the previous 2 years, strong returns were expected for the SE Alaska pink stocks adjacent to the northern boundary area. With a Total Run of 34,766,827 Alaska District 101, 102 and 103 pink salmon in 2004, the AAH for the Area 3(1-4) net fleet was 598,019 Alaska District 101, 102 and 103 pink salmon. The 2004 Canadian pink catch in Sub-areas 3-1 to 3-4 was 402,459, with a preliminary estimate of the Alaska stock component of this catch being 326,693, or 1.36 % of the AAH. This is below the allotted 2.49 % of the AAH.

The total Canadian pink catch of 402,459 in sub-areas 3-1 to 3-4 is much lower than the 1985-2000 average catch of 1.46 million. The below average harvest resulted from a combination of below average returns of Skeena area pink stocks and management restraints on Canadian net fisheries in Sub areas 3-1 to 3-4 to reduce the harvest of less abundant Skeena coho stocks. The percentage of the 2004 Area 3 net catch taken in sub-areas (1-4) was 42.3%, which was well below the 1985-2000 average of 58%.

Pink escapements in 2004 were 542,500 in Area 3 and 647,921 in the Skeena.

Area 1 Pink Troll Catch

Area 1 Pink Troll Catch

For the year 2004, Canada was to manage the Area 1 troll fishery to achieve an annual catch share of 2.57 percent of the annual allowable harvest (AAH) of Alaskan Districts 101, 102 and 103 pink salmon. With a total run of 34,766,827 Alaska District 101, 102 and 103 pink salmon in 2004, the AAH for the Area 1 troll fishery was set at 617,232 pieces.

The Canadian commercial troll fishery was open in the northern portion of Area 1 from July 15-22 and July 23-31. The fishery harvested a total of 27,751 pink salmon, with an estimated 24,543, or 88.4%, being of Alaskan origin. This equates to 0.10% of the AAH of 617,232 Alaskan Districts 101, 102 and 103 pink salmon, well below the annex agreement for 2.57 percent.

Chinook Salmon

AABM Fisheries

North Coast B.C. (NBC) troll and Queen Charlotte Islands (QCI) sport fisheries:

The pre-season abundance index for North Coast B.C. troll and Q.C.I. Sport fisheries in 2004 was 1.67, which allowed a total catch of 243,640 chinook in these fisheries. Preliminary estimates indicate a total catch of 231,319 chinook. 157,319 caught in commercial troll fisheries and 74,000 caught in sport fisheries.

The North Coast B.C. troll fishery was opened for chinook fishing from October 1, 2003 to April 15, 2004, from June 15 to July 1 and from July 18 to 22, 2004. A total of 157,319 chinook were caught. The size limit was 67 cm. Barbless hooks and revival boxes were mandatory in the troll fishery. A test fishery was conducted in areas off the west coast of the Queen Charlotte Islands. 800 legal sized chinook were caught. This catch is included in the total for the troll fishery.

Sport fishing was open with a daily limit of 2 chinook and a possession limit of 4 chinook. An estimated 74,000 chinook were caught in the Queen Charlotte Islands sport fishery. A minimum size limit of 45 cm was in effect and barbless hooks were mandatory in the sport fishery.

ISBM Fisheries

Northern and Central BC Fisheries:

Fisheries included in this category are commercial net fisheries throughout north and central BC, marine sport fisheries along the mainland coast and freshwater sport, and Native fisheries in both marine and freshwater areas. Under the PST, obligations in these fisheries are for a general harvest rate reduction (estimated in aggregate across fisheries) for ocean mixed-stock fisheries and for stock-specific objectives (i.e., achieving the escapement goal) in terminal areas.

North Coast commercial gillnet catches totalled 16,628 chinook from Areas 3 to 6 (from fish slip catch data). Chinook catch was almost equal in Areas 3 and 4 with catches of 8416 and 8124 chinook respectively. 63 chinook were reported caught with gillnets from Area 6 and 25 were reported from Area 5. The Skeena River test fishery index for chinook salmon was lower than 2003. A total of 995 large chinook and 92 jacks were caught in the test fishery.

Central coast commercial seine and gillnet fisheries are managed primarily by Central Coast; however, catch is monitored and estimated through catch monitoring programs operated primarily out of South Coast. As a result, central coast gillnet fisheries Area B seine and Area D gillnet are estimated through the South Coast section of this report.

Tidal sport catches near the mainland coast of Northern BC were not estimated for 2004. Catch in Areas 3 & 4 by the 2004 sport fishery probably exceed the 2002 estimate of 8,000 chinook. No freshwater creel surveys were conducted in the North Coast in 2004. The sport catch from the Skeena River fishery (downstream of Terrace, B.C.) included 6280 chinook in 2003. Effort continues to increase in tidal and freshwater sport fisheries. Effort levels in the lower Skeena River in 2003 were double those measured by the last survey in 1995.

Tidal sport catches from lodges operating in the Rivers Inlet, Hakai Pass and Bella Bella areas totalled just over 10,000 chinook showing an increasing trend over the past few years. Detailed surveys of private anglers are not conducted throughout this area but private catches are generally less than the lodge component.

Catches by First Nations in the North Coast exceeded 18,000 chinook. Nisga'a catches from the Nass River were 5598 chinook. Haida catches on the Queen Charlotte Islands were estimated at 3230 chinook. Catches from some Native fisheries in the Skeena have not been reported but current estimates exceed 8000 chinook. Preliminary estimates of chinook catch by First Nations on the Skeena appear to be slightly less than 2003.

Catches by First Nations in the tidal portion of the Central Coast were reported as 256 chinook while the non-tidal catch of terminal Atnarko River Chinook was 3806 fish.

Overview of Northern BC Chinook Stock Status

Since an assessment of the ISBM fisheries will be relative to the escapements achieved in the chinook indicator stocks, a brief overview of the 2004 returns is provided. Northern BC terminal runs were lower overall than 2003 since lower chinook escapements were observed in the Nass and Skeena watersheds. Preliminary estimates of Nass River escapements declined to 18,460. Skeena River chinook escapements were estimated below 50,000. Escapements to the smaller North Coast indicator stocks appeared to increase slightly. Kitimat River escapements were estimated at 24,000 chinook (hatchery staff estimate) and the Yakoun River escapement was estimated at 4500 chinook.

Overview of Central Coast Chinook Stock Status

Johnstone Strait/Mainland Inlet Chinook

Currently only 2 systems are monitored in Areas 12 and 13 with some level of consistency. The Nimpkish River is monitored using standardized swim surveys and stream walks by the hatchery staff. The Quinsam hatchery staff conducts an intensive mark-recapture program to estimate escapement on the Quinsam/Campbell system. Other systems are covered using intermittent aerial surveys.

Nimpkish

Escapement of chinook for 2004 appears to be slightly higher relative to 2003. Currently the hatchery has captured sufficient brood stock for this season.

Quinsam/Campbell

Preliminary escapement estimates indicate that the total return for both adults and jacks in both Campbell and Quinsam Rivers will be an improvement to 2003, therefore better than average. The improved escapements over the past couple of years seem to be holding at a steady level. Brood stock goal of 1,579 adults attained.

Fraser River Sockeye and Pink Salmon

Fraser River Sockeye Salmon

The sockeye run-size forecast for 2004 resulted in a preseason plan that incorporated both the 50% and 75% probability levels of abundance (4.9 million and 2.9 million respectively) with a predicted diversion through Johnstone Strait of 78%. The pre-season plan also incorporated provisions to protect Early Stuart and Late Run stocks in addition to Cultus and Sakinaw Lake sockeye. The U.S. share of the annual Fraser River sockeye salmon total allowable catch (TAC), harvested in the waters of Washington State, was set at 16.5%. There were no catch overages of Fraser River sockeye from previous years to address. The panel adopted 50% probability level forecasts for Early Stuart, Early Summer, Summer and Late-run sockeye for planning fisheries. The 2004 50% probability forecasts for the four management aggregates are as follows: Early Stuart 216,000; Early Summer 885,000; mid-Summer Run 3.5 million; and Late Run 318,000 (of which 218,000 were Birkenhead type). The forecast for Early Stuart was considered highly uncertain due to unfavourable migration conditions in 2000, but offset by above average egg to fry survival for the successful spawners. The Early Summer forecast was considered highly uncertain as the Nadina and Upper Adams stocks had very large escapements in the brood year. All Late-run stocks were forecast at low levels as a result of early upstream migration and the associated en-route mortality in the brood year (2000). The Panel identified the achievement of Late-run objectives as a priority in 2004. Late Run sockeye have historically delayed in the Gulf of Georgia for 4-8 weeks prior to entering the Fraser River. In recent years this behaviour has changed to one where there has been immediate river entry. This unusual behaviour has been associated with high levels of en-route and pre-spawn mortality, escalating to levels of 90% and greater in 2000 and 2001, though dropping substantially in 2002 (<20%) and 2003 (23%). To address the high probability of continuing en route and pre-spawning mortality in 2004, the Fraser River Panel adopted a precautionary management strategy. Conservation objectives for Late-run sockeye and Cultus/Sakinaw lake sockeye were instrumental in pre-season planning for 2004. The Minister of Fisheries and Oceans decision to limit the exploitation rate on Cultus and Sakinaw sockeye stocks to 10 to 12% had significant impacts on Canadian fisheries. The Panel agreed that fishery impacts on Late-run sockeye in 2004 would be limited to 15% of the total return, and the United States limit would be 2.1 % of the total allowable Late-run exploitation rate.

The pre-season plan made several assumptions, including: Late Run sockeye would continue their early migration behaviour with an associated en route mortality rate of 80% based on a 50% peak migration date in Area 20 as of August 26 (average 50% migration date based on recent Late-run behaviour observed in 2000 and 2001); that an 8 day separation exists in the 50% marine migration timing between Summer-run and Late-run sockeye (historical average timing difference for the years 1980 to 2003); that the capability to assess in-season run size and migration timing in a timely manner would be good for Summer Run sockeye, but poor for Late Run sockeye due to low abundance relative to Summer-run sockeye; and that as a result of in-season limitation with respect to monitoring run strength and migration timing of Late-run stocks in 2004, the approach to management of these fisheries would be based on pre-season planning.

The Canadian fishing plan also addressed conservation specific-concerns for:

- Upper Fraser River/Thompson River coho
- Nimpkish River, Rivers Inlet & Smith Inlet sockeye
- Thompson River steelhead
- Lower Georgia Strait chinook
- Mainland Inlet Pinks
- Inshore Rockfish
- Cultus & Sakinaw Lake sockeye

The current in-season estimated returns of Fraser River sockeye compared to the forecasts used for pre-season planning purposes are shown in the table below:

Run Timing Group	Pre season forecast (% probability forecast)	Final In-Season estimate of run size using Mission data
Early Stuart	216,000 (50%)	200,000
Early Summer	885,000 (50%)	1,500,000
Mid-Summer	3,501,000 (50%)	2,500,000
Late Run	318,000 (50%)	272,000
Total Fraser sockeye	4,920,000	4,472,000

The total Canadian harvest of 1.99 million sockeye exceeded the pre-season modelled (50p-29) goal of 1.66 million sockeye. The final in-season estimated exploitation rate on Late-late sockeye stocks of 16.9% is above the pre-season goal of 15% based on the current estimate of run size and river entry date. Several factors contributed to this: the Summer run size was considerably less than forecast and resulted in an increase in the estimated exploitation rate for Late-run sockeye and Cultus/Sakinaw Lake sockeye; higher than modelled diversion rates through Johnstone Strait resulted in higher catches than expected based on the current run size estimates, and Late-run stock identification was not used for in-season management because it was assumed that in-season detection would not be possible given the low abundance in relation to Summer runs and problems with small stock bias. The current estimated exploitation rates for Cultus and Sakinaw sockeye are 16.0% and 11.0% respectively. Work is ongoing with respect to the late run, Cultus and Sakinaw exploitation rate calculations with the expectation of more final estimates by the January Pacific Salmon Commission meetings in Vancouver.

On October 21, 2004 the Minister of Fisheries and Oceans Canada announced a formal post-season review would be conducted on the management of southern British Columbia salmon stocks in 2004. The decision has been made that this review will be conducted by the recently created Integrated Salmon Harvest Committee with an independent mediator to coordinate the review.

Fisheries

Harvest opportunities on summers were limited by the early migration timing of the Late Run stocks, which were first identified in approach waters (Area 20) on July 23rd. This was the third year in which DNA analysis was used extensively to identify the different Fraser River sockeye stocks.

Harvest opportunities were available in Canada for all user groups, including First Nations, commercial and recreational fisheries. The final in-season estimates of escapement provided from the Mission hydroacoustics program suggest that the gross escapement goals were not achieved for the Early Stuart, Early Summer, and Summer groups, but were slightly exceeded for Late run timing groups.

As in recent years the Late Run sockeye migration into the Fraser River in 2004 was early. DNA analysis of samples taken from the Cottonwood in-river test fishery showed the presence of Late Run sockeye beginning July 27th, which steadily progressed through the season. The early arrival of the Late Run sockeye, below forecast return of Summers and increased diversion through Johnstone Strait resulted in late run and Cultus exploitation rate ceilings being exceeded.

Preliminary estimates of Fraser River sockeye catch in 2004 are as follows:

Total Fraser Sockeye Caught	2,259,700
Test/charter fisheries	73,700
Canadian Catch	1,993,800
Canadian commercial fisheries (includes commercial selective fisheries)	1,326,400
Canadian First Nation fisheries	615,200
Canadian recreational fisheries	52,200
United States Catch	192,200
U.S. Treaty Indian non-Indian fisheries	192,100
U.S. Treaty Indian ceremonial fisheries	100

The above numbers reflect the PSC Sockeye Review Sheet from October 12, 2004. Test/charter catch includes Albion test fishery.

Stock Status

The preliminary spawning ground escapement estimates for Early Stuart and Early Summer sockeye are 9,244 and 156,953 respectively which are well below the escapement goals of 90,000 (Early Stuart) and 310,000 (Early Summer). The in-season gross escapement estimates from the Mission hydroacoustics program for the Mid-Summer Run, Birkenhead, and Late Run (excluding Birkenhead) escapement are 1,403,000 (Summer); 104,000 (Birkenhead); and 112,000 (Lates). A summary of preliminary spawning escapement estimates for all stock groups will not be available until January, 2005.

The Early Stuart, Early Summer and Summer run timing groups experienced much higher than normal water temperatures during their in-river migration. As a result of these conditions the environmental management adjustment model projected en-route losses of 29,000 Early Stuart, 330,000 Early Summers and 570,000 Summers in 2004. Migration conditions during the majority of the Late Run sockeye migration into the Fraser River were more favorable; however en-route losses were still anticipated to occur as a result of the early entry behavior and associated parasite issues as experienced in recent years.

Fraser River Pink Salmon

2004 is an off cycle year for Fraser River pink salmon. No management guidelines are required for even year cycles as there are no directed fisheries on this cycle. Decision guidelines are developed for the dominant odd cycle year.

Southern B.C. Chinook Salmon

Chinook salmon in southern BC are managed under the coastwide management regime agreed in the 1999 PST. This includes AABM in southeast Alaska, Northern BC, and off the WCVI. In Southern BC all AABM chinook fisheries are located on the WCVI.

The offshore recreational fishery, First Nations fisheries, and the WCVI Area G troll fishery are all components of the AABM chinook fishery. For the period October 2003 through September 2004 the chinook abundance index was 0.90 of the base period (calib. #0404) as forecasted by the Chinook Technical Committee of the Pacific Salmon Commission. This provided a total allowable catch of 192,521 chinook for the WCVI AABM fisheries.

Pre-season anticipated harvest and Post Season Preliminary Catch Estimates for 2003-2004 AABM.

	Pre-season	Post Season
WCVI Abundance	0.90	unknown
WCVI AABM Chinook TAC	192,521	unknown
Offshore Recreational Catch	30,000	42,496
First Nations Catch	5,000	5,000
Area G Troll Catch	157,521	168,837
TOTAL AABM CATCH		216,333

WCVI AABM Chinook Fisheries

The WCVI recreational fishery was monitored through a creel survey and reported catches from lodges. The creel surveys monitor catch from both the AABM and ISBM chinook fisheries. Creel observers conducted 10,416 fishing interviews from 19 landing sites from June 01 until September 30 representing 13% effort coverage for the 2004 season.

Recreational AABM areas along WCVI imposed selective fishing regulations such as barbless hooks and size regulations in order to lower post-release mortality and impacts on younger migrating and feeder stocks. For the AABM sport fishery the chinook daily bag limit was two chinook greater than 45 cm. The estimated 2004 AABM sport catch was approximately 42,496 chinook.

AABM chinook sport catch by statistical area.

Statistical Area	Catch
21/121	11,638
23/123	18,880
24/124	9,458
25/125	861
26/126	1,659
TOTAL	42,496

In 2004, 41% more AABM chinook were caught than in 2003. Effort was 8% higher in 2004 than in 2003, with approximately 36,789 boat trips being made during the 2004 season.

First Nations Fisheries

In 2004 First Nations AABM chinook catch was estimated to be 5,000.

Commercial

In 2004, WCVI chinook fisheries were shaped by conservation concerns for spring-run timing upper Fraser River chinook, Lower Strait of Georgia chinook, upper Fraser River and Thompson River coho, and WCVI origin chinook salmon. To protect the early spring-runs of upper Fraser chinook the WCVI troll fishery closed areas where these chinook were known to present between mid-March and mid-April. To protect Thompson coho, chinook troll fisheries were closed after the middle of May. WCVI troll fisheries were also closed until mid-September to protect local WCVI chinook stocks. Selective fishing practices were mandatory, including single barbless hooks and "revival tanks" for resuscitating coho salmon prior to release. Size limits for commercial troll remained unchanged for 2004 at 55 cm (fork length).

Since 1999, a major objective for the management of the WCVI troll fishery has been to distribute the catch throughout the fall-winter-spring-summer periods. In 2004 there was a major effort to decrease the catch in the April-May period and re-allocate some of that TAC to other months in the year. This was done to protect returning lower Strait of Georgia chinook stocks, such as the Cowichan, and to distribute the exploitation of chinook over a longer time period and a broader suite of stocks. In consultation with Area G Advisors, it was also agreed that there would be no fisheries in June in order to permit a September fishing opportunity.

WCVI Area G troll fisheries during the 2003/2004 period.

Areas open*	Majority of catch from:	Fishing Period	Chinook Catch	Chinook Allocation
123-127	123, 126	Oct. 1-3, 2003	17,905	15,000
23-27, 123-127	23,123	Nov. 1-2, 2003	2,955	1,000
23-27, 123-127	23,123	Dec. 1-21, 2003	825	1,000
23-27, 123-127	23,123	Jan. 4-Feb. 2, 2004	1,561	2,000
23-27, 123-127	23,123	Feb. 3-29, 2004	2,837	3,000
23-27, 123-127	123, 126	Mar. 1-10, 2004	2,337	↑
23-27, 124-127	124, 126, 127	Mar. 16-21, 2004	5,706	15,000
23-27, 124-127	124, 126, 127	Apr. 1-9, 2004	7,972	↓
23-27, 123-127	124, 126, 127	Apr. 15-27, 2004	43,209	35,000
23-27, 123-127	123, 126, 127	May 1-3, 2004	32,197	35,000
23-27, 123-127	123, 126, 127	May 15-16, 2004	19,289	15,000
26, 124-127	26, 126	Sep. 17-20	32,044	18,000
		TOTAL	168,837	140,000
TOTAL COMMERCIAL ALLOWABLE CATCH			157, 521	

* sub-areas closures were in effect within many of the open statistical areas. Refer to DFO Fishery Notices for further clarification.

Fisheries were monitored to determine encounter rates of other species and released chinook. Biological sampling was conducted for such things as size distributions, and stock compositions (via CWT, DNA and otolith samples).

Southern BC Chinook ISBM

In addition to the PST regime, Canada implements management actions as required to ensure conservation of Canadian origin chinook and meet domestic allocation requirements. These chinook fisheries are managed to harvest rates on an individual stock basis (ISBM).

In 2004 specific management actions were taken to protect WCVI origin chinook in Canadian fisheries, the harvest of which was restricted to an exploitation rate of up to 15%.

Most Southern BC commercial fisheries were regulated so that impact on WCVI chinook stocks was minimized. In addition to these general restrictions area and time closures were in place to protect returning upper Fraser and WCVI chinook stocks during sport and commercial fisheries. There was a general requirement to apply selective fishing techniques, including area and gear restrictions and the mandatory use of revival tanks in all commercial fisheries. Catch monitoring included requirements for daily catch reporting, mandatory logbooks, hailing catches on a regular basis, and independent on-

board observers on vessels when requested. Post-release mortality information for chinook included in ISBM management were determined from studies conducted in 2000-2001 and detailed in the Canadian Stock Assessment Secretariat, Research Document 99/128 (CSAS, Doc 99/128).

Preliminary estimate of ISBM chinook catch for 2003.

ISBM Recreational Catch	133,681
ISBM First Nations Catch	60,469
ISBM Commercial Catch	20,745
Total	214,895

Recreational

The recreational ISBM chinook fishery is monitored using creel surveys and regulated using over/under limits and an area/bag restrictions. Depending on the area catch regulations include an annual bag limit of 15-20, a daily bag limit of 2 and a size limit of 45-62 cm.

2004 ISBM chinook catch in recreational fisheries.

Year	Fishing Area	Survey Period	Chinook Kept
2004	Johnstone Strait	Jul - Aug	12,837
2004	Georgia Strait	May - Oct	13,948
2004	Fraser River	June - September	10,609
2004	Juan de Fuca Strait	January - October	38,109
2004	West Coast Vancouver Island	June - September	58,178
2004	TOTAL		133,681

First Nations Fisheries

First Nations fisheries were conducted with and without agreements in place in 2004. The reported catch estimates are a combination of FSC allocations and economic opportunity fisheries.

Year	Fishing Area	Chinook Kept
2004	Johnstone Strait	28
2004	Georgia Strait	1,066
2004	Fraser River	39,375
2004	West Coast Vancouver Island	20,000
2004	TOTAL	60,469

Commercial Fisheries

In 2004 several commercial fisheries targeted ISBM chinook including gillnet fisheries in Alberni Inlet, gillnet and troll fisheries in the Fraser River, and gillnet fisheries in Tlupana Inlet. Retention of chinook caught as bycatch was permitted in some fisheries, and in others non-retention was in effect.

Year	Licence Area	Chinook Kept
2004	Area B Seine	24
2004	Area D Gillnet	12,554
2004	Area E Gillnet	7,216
2004	Area G Troll	291
2004	Area H Troll	660
2004	TOTAL	20,745

Stock Status

Upper Fraser Chinook

To date, only preliminary numbers are available; data are not yet validated, and intensive population estimates have yet to be analyzed. Early spring chinook returns looked good at Spius and Coldwater (>800 spawners each); however, upper Chilcotin was only fair. Most escapements for upper river and later lower Thompson spring populations were above their parental brood escapements (Bowron R. and Nicola R. approx. 10,000 spawners each); some fish were late entering natal streams due to prolonged drought conditions, however, the late August rains not only provided passage into the systems, but also compromised counting conditions in some northern rivers.

Summer chinook returns were patchy, with some systems continuing to be strong, while others failed to equal parental escapements. Yearling summer returns were mostly reasonable, with some bright spots (Chilko >15,000, Nechako >8,000), however Quesnel was poor at <2,500. Under-yearling summer returns were also patchy with South Thompson ~35,000; however Lower Shuswap and Middle Shuswap failed to meet their brood year escapements at ~14,000 and ~1,800.

Lower Fraser Chinook

The Lower Fraser Area (LFA) can be divided into four sub-areas: lower Fraser River, Howe Sound/Squamish River, Burrard Inlet and Boundary Bay. Chinook assessment data in these sub-areas come from a variety of sources. In 2004, these include Aboriginal Fisheries Strategy (AFS) projects, community-run Salmonid Enhancement Program (SEP) projects, and Habitat Enhancement Branch's (HEB) major SEP facility projects. Attempts are made to have these projects complement our Science Branch funded Lower Fraser Area Stock Assessment (LFA StAD) projects (i.e. core assessment projects).

Lower Fraser River:

Spring-run: Early returning chinook in the lower Fraser to systems such as the Birkenhead, upper Pitt and upper Chilliwack (Dolly Varden Creek) Rivers remain poorly assessed. Similar to previous years, staff from an AFS funded project teamed up with a local resident to assess the returning chinook in a manner similar to historical protocols. The escapement estimate for 2004 is well below the 5-year average of approximately 500 fish, and down for the third straight year. A trend of decreasing escapements is developing. Consequently, stock status of this stock group is low.

Summer-run: Summer-run chinook in the lower Fraser River do not have a reliable time series of escapement information. Maria Slough, Big Silver and hatchery-run populations

in the Chilliwack and Chehalis Rivers are part of this stock group. Limited information obtained from other data sources indicates a moderate stock status.

Fall-run: Lower Fraser River fall-run chinook stock group escapements are, on average, large (>100,000). The major contributor and principal focus of this stock group is those chinook returning to the Harrison River. Harrison River transplants to the Chilliwack and Stave Rivers also contribute significantly to the overall escapement of this stock group but are primarily driven by hatchery releases. In 2004, both the Harrison and Chilliwack River returns are being assessed by LFA StAD. These projects are currently underway; however, early indications are the 2004 Harrison River escapement is greater than the lower bound of the escapement goal range (75,100 to 98,500) for this population.

Howe Sound/Squamish River:

HEB's Tenderfoot Hatchery brood stock collection program (in Howe Sound) and an AFS funded chinook assessment project are contributors to our knowledge of chinook salmon stock status in this sub-area. There are no intensive chinook assessment projects currently being conducted in this sub-area. Difficulty lies in determining whether the current suite of projects provide an index of escapement. Current year data is not available.

Burrard Inlet:

HEB's Capilano Hatchery and a small AFS funded assessment project are contributors to our knowledge of chinook salmon stock status in this sub-area. Although the Indian River may have supported moderate sized runs of chinook salmon in the past, it is currently thought that the numbers of natural chinook escaping to this sub-area remains small. Significant numbers of chinook releases from the Capilano Hatchery can return to the Capilano River; however these annual Capilano chinook releases are from eggs taken from Chilliwack River fall-run returns (i.e. Harrison River origin). As a result of the extremely limited natural chinook salmon production, there are no intensive chinook assessment projects currently being conducted in this sub-area. In addition, current year data is not available at present.

Boundary Bay:

Community-run Salmonid Enhancement Program (SEP) projects contribute significantly to chinook returns to this sub-area. Limited core assessments are conducted by LFA StAD staff. Current year data is unavailable.

Strait of Georgia Chinook

Water levels in 2004 for most East coast Vancouver Island systems were particularly low and warm during the summer and average during the fall. Generally good enumeration conditions prevailed. Overall status for enhanced stocks is stable with generally increasing trends but down from highs in 2001, while the natural stocks are at best stable with some southern Strait stocks declining. Rebuilding of natural stocks is very slow under current marine survival conditions.

Fall Stocks:

Lower Georgia Strait natural stocks are continuing to decline or remain at low levels. Latest assessment of Cowichan stock indicated increasing exploitation, declining escapement and continued poor marine survival. Forecast is for continued declining returns based on a poor showing of jacks in 2004 and 2002 brood year returns were less

than 2001. Numbers of spawners have declined substantially from the highs in 1995-96 and reached low levels similar to the 1987-88 crisis that initiated the LGS rebuilding program. Upper Georgia Strait natural stocks escapement declined for the third year but seem to be somewhat more stable due to marginally improved marine survival. Both Lower and Upper Georgia Strait enhanced stocks have declined for the past three years and are down from higher levels in 2001 but remain stable. Forecast for enhanced stocks should be similar to 2004 returns.

Mainland Inlet hatchery returns (Lang, Sliammon) were down from last year with the overall trend showing some decline in recent years. Historic records are very poor for natural stocks (Theodosia, Skwakwa), but recent years have shown critically low numbers of spawners.

Spring/Summer stocks:

Only two stocks are monitored in this group; Upper Nanaimo and Puntledge summers. Upper Nanaimo stock has had low escapement for past few years and remains at low level. Puntledge summers experienced declining escapement trend in past few years after increasing trend in 2001 and are again at low levels. This stock also suffered a significant disaster this year due to high water temperatures. Approximately 80% of the spawners died while holding in pools during the warm summer weather. Only 250 adults were assumed to have survived but it is unknown as to spawning success. Forecast for summer stocks is to remain at low levels based on comparable returns in 2002 brood year compared to 2001 and average return of jacks.

West Coast Vancouver Island Chinook

Escapements to most natural chinook systems appear to be above expected levels, including some areas of concern, Kyuquot Sound and several systems in Clayoquot Sound. Escapement monitoring in 2004 proceeded very well with favourable survey conditions. Reliability of estimates should be good.

The terminal return for Stamp River / Robertson Creek Hatchery indicator exceeded expected levels. Abundance of age 3's from 2001 brood year appears to be very good. The jack return from 2002 brood was down considerably from 2003 and lower than 2001 but was similar to both 2000 and 2002 returns and indicates decent survival.

In-river returns to Conuma and Nitinat hatcheries were down from 2003. However sport catch was greater than in 2003 for Nootka Sound and was similar in Nitinat. Overall terminal return was probably similar for Conuma and down for Nitinat in comparison to the very good 2003 returns.

Johnstone Strait/Mainland Inlet Chinook

Currently only 2 systems are monitored in Areas 12 and 13 with some level of consistency. The Nimpkish River is monitored using standardized swim surveys and stream walks by the hatchery staff. The Quinsam hatchery staff conducts an intensive mark-recapture program to estimate escapement on the Quinsam/Campbell system. Other systems are covered using intermittent aerial surveys.

Nimpkish:

Escapement of chinook for 2004 appears to be slightly higher relative to 2003. Currently the hatchery has captured sufficient brood stock for this season.

Quinsam/Campbell:

Preliminary escapement estimates indicate that the total return for both adults and jacks in both Campbell and Quinsam Rivers will be an improvement to 2003, therefore better than average. The improved escapements over the past couple of years seem to be holding at a steady level. Brood stock goal of 1579 adults attained.

Southern BC Coho

The forecast of 2004 abundance indicated that the status of interior coho in the Fraser River system remained critically low. The lower Fraser, Georgia basin east and west and Johnstone Strait coho management units were all forecast to be of low status. WCVI coho were forecast to return poorly but there was no suggestion of a trend and their status was considered to be moderate.

Consequently, in 2004, interior Fraser coho were the primary concern in implementing fisheries. Under the Abundance Based Management provisions in the Pacific Salmon Treaty, the US was limited to a maximum 10% exploitation on interior Fraser coho. In Canada, the management objective for these coho in 2004 was to limit the total mortality to a ceiling of 3% across all Canadian fisheries. The total exploitation on interior Fraser coho was therefore limited to a maximum of 13%.

To ensure this limit was not exceeded in Canadian fisheries, non-retention of wild "unmarked" coho was required in all sport and commercial fisheries operating in areas of southern BC where Thompson River coho were known to be prevalent. Only terminal areas along the west coast Vancouver Island (WCVI) and also a small portion of upper Johnstone Strait and Queen Charlotte Strait for a short time period (1 wild coho retention was permitted in Area 11 and upper Area 12 from June 15 to Aug 2) were excluded from the requirement for wild coho non-retention.

Preliminary estimate of coho catch for 2003.

ISBM Recreational Catch	59,281
ISBM First Nations Catch	6,491
ISBM Commercial Catch	3,162
Total	68,934

Recreational

Non-retention of wild "unmarked" coho was required in all sport fisheries operating in areas of southern BC where Thompson River coho were known to be prevalent, including the mixed stock areas of the WCVI (Statistical Areas 21-27, 121-127), Strait of Juan de Fuca (Statistical Areas 19-20), Strait of Georgia (Areas 14-19, 28, 29), and the majority of Johnstone Strait and Queen Charlotte Strait (Statistical Areas 11, 12 and 13). (Statistical Areas 11, 12 and 13). In terminal areas where Thompson coho were not considered to be impacted, retention of wild coho was permitted.

2004 coho catch in recreational fisheries.

Year	Fishing Area	Survey Period	Chinook Kept
2004	Johnstone Strait	Jul - Aug	4,909
2004	Georgia Strait	May - Oct	3,078
2004	Fraser River	June - September	12
2004	Juan de Fuca Strait	January - October	11,053
2004	West Coast Vancouver Island	June - September	40,229
2004	TOTAL		59,281

First Nations

First Nations fisheries were conducted with and without agreements in place in 2004. The reported catch estimates are a combination of FSC allocations and economic opportunity fisheries.

Year	Fishing Area	Chinook Kept
2004	Georgia Strait	6,361
2004	West Coast Vancouver Island	130
2004	TOTAL	6,491

Commercial Fisheries

In 2004 Southern BC commercial fisheries were generally regulated so that impacts on coho, and especially Thompson coho stocks, were minimized. Terminal opportunities to harvest coho were available to the gillnet fleet in Alberni Inlet in 2004.

Year	Licence Area	Chinook Kept
2004	Area B Seine	8
2004	Area D Gillnet	3,016
2004	Area G Troll	131
2004	Area H Troll	7
2004	TOTAL	3,162

Stock Status

Upper Fraser Coho Stocks

Field programs to estimate escapements are currently underway, and while early returns to North Thompson systems (Blue, Albreda, Louis) have been encouraging, it is too early to accurately determine the run strength. Near final estimates will not be available until March; and data entry and verification are not yet even underway for any systems. Again, at this time, early spawner levels appear to better than those observed in 2003.

Lower Fraser Coho Stocks

The Lower Fraser Area (LFA) can be divided into four sub-areas: lower Fraser River, Howe Sound/Squamish River, Burrard Inlet and Boundary Bay. Coho assessment data in these sub-areas come from a variety of sources. In 2004, these include Aboriginal Fisheries Strategy (AFS) projects, community-run Salmonid Enhancement Program (SEP) projects, and Habitat Enhancement Branch's (HEB) major SEP facility projects. Attempts are made to have these projects complement our Science Branch funded LFA StAD projects (i.e. core assessment projects).

Lower Fraser River:

The PST wild coho indicator stock for the lower Fraser River is the Salmon River (Langley), a low gradient urban stream. Historically, intensive combinations of fence/trap and mark-recapture techniques were used to assess both smolt production and adult escapement in this system.

The preliminary number of smolts emigrating from the Salmon River system this past spring (2004), based on a fence census, was 62,300 (previous 5-year average of 69,900). The smolt mark-recapture estimate in 2004 was 93,300; a difference of 31,000 when compared to the fence census. These smolts are the brood of an estimated 2,700 females that returned and spawned in 2002; these smolts will return as 3-year-olds in 2005. Lower water levels have allowed us to maintain the fence throughout smolt migration for four of the past seven years. The average difference between the smolt mark-recapture estimate and the fence census for these four years is 41% (i.e. mark-recapture estimate higher than census in all four years). Differential mortality associated with marking and predation on the marked group as they migrate from the mark application site to the recapture site, are believed to be contributing factors to the observed difference. In addition, no estimate of pre-smolt emigration is derived for this coho stock. Consequently, caution is recommended when using smolt data as a predictor of subsequent adult returns.

As of November 30, 2004, 208 coho adults have been counted through the fence, which operates 5 days per week. In addition, significant rain events in October and through November have required the fence to be lowered to prevent fence damage. The number of adults that passed the fence site during the times the fence is lowered is unknown. A mark-recapture technique will now be utilized to provide an escapement estimate for this year's return. Carcass recovery has only just begun and will continue into February 2005. Consequently, it is too early to provide a preliminary in-season adult escapement estimate for 2004.

A complementary hatchery coho indicator stock is assessed at Inch Creek by HEB's Inch Creek Hatchery. Coho adults have only started to enter the hatchery in any significant numbers in the last half of November. In addition, carcass recovery effort has only now picked up. Consequently, it is too early to provide an estimate of run strength and as a result stock status, for this population.

Similar to last year, the mark-recapture project on adult coho returning to the upper Pitt River was not conducted. This project provided a quantitative assessment of a significantly large "up-land" lower Fraser River stock.

On a number of systems in within the lower Fraser River sub-area, adult coho salmon visual surveys are being conducted in 2004. AFS and community-run SEP projects, and HEB's major facilities (e.g. Chilliwack Hatchery) are major contributors to this type of assessment in the LFA. It is too early to provide a quantitative assessment of these 2004 data as these projects will continue into the new-year.

Howe Sound/Squamish River:

HEB's Tenderfoot Hatchery and an AFS funded coho assessment project are significant contributors to our knowledge of coho salmon stock status in this sub-area. Current year data is not available at present.

Burrard Inlet:

HEB's Capilano Hatchery, a community-run SEP project (Seymour River Hatchery) and a small AFS funded assessment project are contributors to our knowledge of coho salmon stock status in this sub-area. Although significant returns of natural coho salmon to systems such as the Seymour and Indian Rivers are thought to be occurring, this sub-area is principally dominated by the Capilano Hatchery returns to the Capilano River. Current year data is not available at present.

Boundary Bay:

Community-run Salmonid Enhancement Program (SEP) projects contribute significantly to coho returns to this sub-area. Limited core assessments are conducted by LFA StAD staff. Current year data is not available at present.

Overall, with LFA adult coho assessments continuing into February 2005 in some instances, a determination of coho salmon stock status in the LFA, or any of the sub-areas, for 2004 is not possible at this time.

Strait of Georgia Coho Stocks

This section deals with the Georgia Basin excluding the lower Fraser, Squamish and Burrard Inlet portions, which are discussed above. It is too soon to be conclusive about coho escapements this year in the Georgia Basin. There have been about 2,700 coho counted to date at Black Creek, near Courtenay. This partial count is near the total escapement estimate for 2003 and the recent five year median of total escapements. Early counts from other streams suggest that escapements will likely be sufficient to fully utilize the freshwater rearing capacity in most Vancouver Island streams and perhaps in Area 16 (below Jervis Inlet). Coho in Area 15 (the northern mainland side of the Strait) remain a concern, based on escapements to our Myrtle Creek indicator and fry densities throughout the Area.

The Black escapement thus far equates to a marine survival of 3%. The forecast was 4.7% and the final survival estimate may be near this. These are low survivals. Despite generally adequate escapements, declines in freshwater rearing habitat coupled with continuing low survivals of Strait of Georgia coho mean that the status of this stock assemblage is poor. Catch restrictions are allowing a very large proportion of the total return to be passed through to escapement.

Next year's returns arise from this year's smolts and they were about two thirds as abundant compared to 2003 and to the recent five year average (as indicated from eight counts, all in the northern Strait). With marine survivals likely to remain low, the prospect for 2005 is for equivalent returns, i.e. about two thirds.

A reduced fry survey was conducted recently and the results have not been fully analyzed. However, it's clear that, overall, 2004 fry densities were about 75% of 2003 and the five year mean. This is probably a result of dry weather in the summer.

West Coast Vancouver Island Coho Stocks

There are fixed site counts in Area 23 at Stamp Falls and Carnation Creek and on Jensen Creek in Area 26. The final estimated number of coho at Stamp Falls will probably be 40,000 to 45,000: about half the escapement in 2003, half the mean 1999 to 2003 escapement and slightly less than the long term mean. About 80% of the Stamp Falls coho are from Robertson Creek Hatchery. Since the hatchery releases approximately constant numbers of smolts each year, the Stamp Falls count is correlated with marine survival and the 2004 data suggest that survivals were below average, as forecast. The wild coho indicator in SW Vancouver Island is Carnation Creek, where the escapement this year will be about 150. This equals the 30 year average but is below recent escapements. The Jensen Creek escapement is unknown at this time but extensive surveys indicate that, unlike the Area 23 indicators, escapements have been good in NW Vancouver Island.

Smolt abundances in Cherry Creek (Port Alberni), Carnation Creek and in a tributary of Gold River were about the same as in 2003, overall, and near the five year mean. We could not survey fry in NWVI and parts of SWVI this year. Where measured in SWVI, fry densities were below average. This is often related to dry summer weather.

We have some long-standing concerns regarding the status of coho in Clayoquot Sound but the status of WCVI coho as indicated by fry, smolts and adults was generally moderate in 2004. Early to mid-season escapements are generally good. No downward trends are apparent over the region that would suggest a conservation concern.

Johnstone Strait and Mainland Inlet Coho Stocks

The Johnstone Strait Coho stock status indicator the Keogh River showed a significant improvement in escapement this year, indicating improved marine survival in comparison to the past few years. The shift in survival is promising after 2003 decline, but smolt output in 2004 from the Keogh River was one of the lowest on record. This is likely due to the extremely dry spring which may have some consequences in coho returns for 2005.

Preliminary evidence from extensive escapement coverage in some of the Mainland Inlet areas are showing stable returns compared to recent years especially in Area 12. The marine survival indicator for Area 13 is the Quinsam River Hatchery. Data from Quinsam and other Area 13 systems have not yet been compiled.

Southern Chum

Johnstone Strait

This year constituted the 3rd year of the exploitation rate strategy for Study Area Chum in Johnstone Strait. In order to ensure sufficient escapement levels while providing more stabilization of the fisheries a 20% fixed exploitation rate strategy was implemented independent of run size. A preseason planning model was utilized to layout the fishing plan based on expectation of effort and exploitation levels by gear group. Fisheries were conducted based on allocation of the 20% across the user groups of which 15% was allocated to the commercial gear groups. The additional 5% was set aside to satisfy FSC, recreational, test fish, U.S Commercial requirements and provide a buffer to the commercial exploitation. Past tagging studies conducted in 2000 and 2001 helped in the development of this strategy in assessing the exploitation rate and migration timing of chum stocks in the Straits.

In-season information is still being collected and analyzed in regards to the final harvest rate estimation.

First Nations

The estimated catch by First Nations in the Johnstone Strait area is 15,000 chum.

Marine Sport

The recreational catch in Johnstone Strait (Area 12) was estimated at 512 chum. This estimate represents catch during the July and August months only. Note that the creel survey in Area 13 to the end of October estimated a catch 5,145 chum, but this is traditionally reported as Strait of Georgia catch. The majority of the catch and effort was in lower Area 13 during October and early November.

Non-tidal sport

There were no directed chum fisheries in non-tidal waters in the Johnstone Strait area.

Commercial

Johnstone Strait study area chum fisheries for commercial seine, gillnet and troll were conducted between September 30 and October 20. The catch results as follow:

Two seine fishery openings were conducted, the first on Oct 4 (12 hrs) and the second on Oct 20 (10 hrs) estimated total catch 851,500 chum.

Three gillnet fishery openings (approximately 6 fishing days) were conducted between September 30 and October 16, estimated total catch – 145,300 chum

Two troll fishery openings (7 fishing days) were conducted between Oct 1 and Oct 9, estimated total catch – 102,300 chum

The total commercial fishery study area chum catch from Johnstone Strait was 1,099,100.

Johnstone Strait (Areas 12 and 13)

Fishery Date	Gear type	Effort	Catch
Sept 30 to Oct 2 (41 hrs)	D - GN	118	44,600
Oct 1 to 3 (3 days)	H - TR	64	36,120
Oct 4 (12 hrs)	B - SN	124	387,800
Oct 6 to 9 (4 days)	H - TR	70	66,180
Oct 7 to 9 (36 hrs)	D - GN	113	41,200
Oct 14 to 16 (41 hrs)	D - GN	117	59,500
Oct 20 (10 hrs)	B - SN	124	463,700

	Total Catch	% of catch	J.S. Allocation Plan
Area B	843,500	77.4	77% (82% of net share)
Area D	143,300	13.2	17% (18% of net share)
Area H	102,300	9.4	6% (of total commercial)
Total Catch:	1,089,100		

Note that in addition to the Johnstone Strait mixed stock chum fishery, a terminal chum fishery occurred in Bute Inlet in Area 13. This fishery was comprised of a 4 boat Area D GN assessment fishery during the time period of Aug 27 to Oct 11 and also included five days of Area D GN fisheries, 4 days between Sept 16 to 21 and 1 day on Oct 25. The

total chum catch from these fisheries was 37,044 chum and is not included in the above catches.

Stock Status

The preseason expectation for Study Area Chums suggested average to below average returns to the area. The main component to the return was expected to be the Fraser River stocks, although both Fraser and Non-Fraser components of the return were originating from extremely weak brood returns in 2000.

Test fishing commenced on September 15 and was terminated on October 30th. There appeared to be a good abundance of study area chum this year based on test fishing, fishery catches and escapement estimates. Preliminary information on escapements to date lends themselves to improved marine survival for the Inside Study Area stocks. In-season information is still being collected and analyzed in regards to total stock size.

Terminal returns

At this point we are still too early to assess the escapement to the Nimpkish River. Summer run chum escapements in Bute Inlet (Orford River) continue to demonstrate an increasing abundance trend which allowed for directed terminal gillnet opportunities to harvest the identified surplus.

Fraser River Chum

The escapement objective for Fraser River chum is 800,000. Required protection for co-migrating stocks of concern delays fisheries from the peak of the run (mid-October) to the end of the run (late October – early November) although the return has been above the escapement objective for a number of years. Small numbers of short fishery openings have prevented adverse impacts on local chum populations.

Fisheries

Fraser River chum are harvested in Johnstone Strait as well as in the Fraser River. Johnstone Strait fisheries are covered in the following section.

Chum fisheries are severely limited by conservation concerns for Interior Fraser (including Thompson River) coho and Interior Fraser steelhead. The lower Fraser River was closed from September 7 – October 8 below Mission (September 9 – October 11 between Mission and Hope) to all but selective gear to protect Interior Fraser coho. Commercial gill net fisheries are further restricted to the end of October to protect Interior Fraser steelhead. The single most difficult issue the Fraser chum fishery faces is the ongoing problem of conserving small populations of co-migrating Interior Fraser steelhead.

First Nations

First Nations food, social and ceremonial (FSC) fisheries commenced October 9 following the end (97.5%) of the Interior Fraser coho migration. The estimated catch from all fisheries below Sawmill Creek to November 7 is 58,250. ESSR harvests have not yet been reported.

Recreational

Catch in the main stem Fraser recreational fishery began on October 9. Harvest is not being assessed in 2004.

Commercial

Chum test fishing began on September 1 and was conducted on alternate days (alternates with chinook test fishing) until October 21 when chinook test fishing was completed; chum test fishing then continued on a daily basis. Chum catches in the 6.75" chum test net to November 14 total 12, 638.

Two Area E (commercial gill net) fisheries took place within specified portions of Area 29 on October 20 and November 4 with estimated catches of 39,258 and 30,798, respectively.

Stock Status

Total Fraser River chum run size is estimated in-season using Albion test fishing catches and a Bayesian model. A run size of 1.8 million was calculated with Albion catch data to November 14. No other escapement estimates for the 2004 return are currently available.

In general the overall status of Fraser River chum is uncertain. While there have been substantial returns in recent years (e.g. 1998) the timing of the run appears to be truncated compared to historical run distribution. Chum used to return to the Fraser River and its tributaries well into December. The run is now essentially over by early November. Whether this is a result of fishing practices, habitat changes to the spawning area that were used by late returning fish (e.g. mainstem spawning areas) or some other currently unidentified factor has yet to be determined. The lack of stock status information is hampering management of the chum fishery. Escapement estimates are based on enumeration of a very few large enhanced systems and even this minimal effort is being impacted by fiscal constraints. The status of small systems and different timing groups needs to be resolved.

Strait of Georgia Chum

The Strait of Georgia chum fisheries consists of terminal opportunities for chums returning to their spawning streams. Many of the potential terminal fishing areas have enhancement facilities / and or spawning channels associated with the rivers. Terminal fishery strategy consists of monitoring and assessing stocks (escapement and returning abundances) with the objective of insuring adequate escapement and providing harvest opportunities where possible. Assessing stocks may include test fisheries, commercial assessment fisheries, escapement enumeration, and over flights. In some areas where stocks receive considerable enhancement (Qualicum) or where stocks have above average productivity, limited fishing may occur prior to major escapement occurring.

Qualicum having three major enhancement facilities (Big Qualicum, Little Qualicum and Puntledge hatcheries) has a specific harvest strategy, implemented since 1981. The strategy consists of limited early harvesting prior to escapement occurring. The early harvest total allowable catch (TAC) ceiling is 65% of the total surplus. This allows for a buffer to safeguard against forecast / stock abundance error. This buffer is limited to 100k, at which the additional surplus after 100k buffer can be considered early harvest TAC. The harvesting of early (brighter) fish includes conservation considerations to

minimizing other species bycatch and minimizing the harvest of non-target passing chum stocks.

Other factors affecting the scheduling of commercial fisheries include coast-wide allocation, fishery impacts, gear interaction, effort and weather.

Recreational marine catches for chum salmon are generally small. Occasionally recreational in-river fisheries occur where surpluses or target escapements will be met. These fisheries are almost exclusively where enhancement facilities are present.

Fisheries

The terminal Strait of Georgia fisheries are managed on a stock by stock basis. Each area receives individual assessments according to the characteristics of the potential harvesting. Assessment and harvesting may begin as early as October and continue to as late as December. Information is preliminary and current to mid November and potential fishing opportunities may still occur in the terminal areas.

First Nations

Chum were harvested by First Nation for both ESSR and FSC opportunities. The total chum reported to be harvested by all bands was 22,661. Catches are still being compiled.

Recreational

Recreational creel survey extends to the marine area Discovery Passage, (outside of Campbell River). This area was originally an extension of the Strait of Georgia creel survey and is traditionally reported with the Strait of Georgia catch. The total catch estimated by the creel survey and reported, as Strait of Georgia catch retained is 19,200. The majority of chum catch occurs in the Discovery Passage area.

During the terminal fishery on the Puntledge River (Area 14-14), anglers were allowed to keep two chum per day. The river was open from October 1 to November 30 and was using a daily log card system with on-ground effort counts. The numbers of chum coming through the river were very good and the estimated catch for chum was between 3000-4000, with only 10-15% of the total catch retained. Most of the chum encountered on the Puntledge River are caught indirectly as most of the angler effort is directed towards coho and chinook. Compared with the previous years, the angler effort and the chum encountered were similar, with most of the chum caught indirectly with the coho fishery. These numbers are preliminary and are awaiting entry of data.

Commercial

Area 14 – Qualicum. Gillnet openings occurred from October 18, 25, November 1-4, 7-9. Gillnet catches totalled approximately 94,942. Troll fisheries occurred on October 17-19, 25-27, and November 2-4. Troll catches are estimated to total 2,795. A seine fishery occurred on November 11. Seine catch is estimated to be 28, 970.

Area 17 – Nanaimo. Gillnet openings occurred from October 25-28, 1-4, 8-10. Gillnet catches totaled approximately 8,833. Troll fisheries occurred on October 25-28, and November 1-12. Troll catches are estimated to total 40. No seine fisheries occurred.

Area 18 – Satellite Channel. Gillnet openings occurred from November 17-19, 22-24. Gillnet catches totaled approximately 17,730. No troll or seine fisheries occurred.

Area 19 - A commercial communal licence was issued to Saanich Tribes in contemplation of a small bite seine fishery in Saanich Inlet. However low abundance in Saanich Inlet resulted in no fishing opportunities for Saanich Tribes or Area B seine.

Stock Status

The returning chum stock to the Strait of Georgia for 2004 was forecasted to be below average. Fisheries for First Nations were anticipated and occurred in most areas and for commercial and recreational, in Qualicum, Nanaimo, and Cowichan areas. The 2000 brood year was very low in escapement levels, thus providing a low general forecast. In general, chum survival has been average to above average and current chum escapements to many smaller streams have been encouraging. Historically, chum returns have been highly variable.

Currently, returns have been larger than expected. Many fisheries have occurred and are continuing. Escapements are often near or above targets. Conditions for chum migration continue to be good (water levels).

West Coast Vancouver Island Chum

The West Coast of Vancouver Island (WCVI) chum fisheries consists of terminal opportunities for chums returning to their spawning streams. The main potential terminal fishing (Nitinat and Nootka) areas have enhancement facilities associated with the rivers. Terminal fishery strategy consists of monitoring and assessing stocks (escapement and returning abundances) with the objective of insuring adequate escapement and providing harvest opportunities where possible. Assessing stocks may include test fisheries, commercial assessment fisheries, escapement enumeration, and over flights. In outer Nootka Sound where there is a mixture of wild and enhanced stocks, a harvest rate fishery occurs. The harvest rate target is 20 - 30% of the wild stock. In addition fisheries may occur on terminal surpluses adjacent to the enhanced systems in Tlupana Inlet. In Nitinat the harvest is dependent on forecasted and in-season assessed returning stocks. This year two additional commercial gillnet assessment fisheries have occurred. These fisheries were effort restricted and occurred in approach areas to Barkley Sound and Esperanza.

Another objective is to minimize the by catch of concerned species, such as chinook, coho, and steelhead. Since 1995, the bycatch concerns have been addressed by delayed opening dates, reduced fishing area, increased use of weed lines, and selective fishing techniques. In 2004, concerns for bycatch of steelhead were again an important factor in determination of the fishing opportunities in the Nitinat area. However, in Nootka Sound coho retention incidental to the chum gill net fishery was permitted due to recent year favourable returns.

First Nations fisheries under section 35 remain a priority and occur in terminal areas based on maximum harvest levels. Additional fisheries may occur under ESSR policy guidelines, where surplus chum occur, in the past primarily in Nitinat Lake.

Recreational marine catches for chum salmon are generally small. Occasionally recreational in-river fisheries may occur where surpluses or target escapements have been met, particularly in the Nitinat and Conuma rivers.

Fisheries

The primary fishery which harvests chum is the commercial sector. Of the commercial sector gillnet and seine is the main harvesters in Nitinat and gillnet in Nootka. First Nation fisheries (section 35) remain a priority and generally occur in terminal areas (i.e. Nitinat Lake). Effort and catch are usually relatively low. In river recreational fisheries are not wide spread, but have recently occurred annually in terminal area rivers (i.e. Nitinat River). Other recreational marine fisheries are generally low in effort for chum. In recent years a scientific license has been issued in Nitinat Lake to provide information on returning chum stocks.

First Nations

The FSC fishery in Nitinat Lake operated in conjunction with a scientific license. Approximately 800 chums were taken for FSC. First Nation (section 35) chum catch continues to be compiled; however, the annual amount is generally small.

A scientific licence was issued to the Ditidaht to harvest up to 2,000 chinook, 2,000 coho and 10,000 chums in 2004. The purposes of these activities was to provide information on migration timing and abundance, to collect unbiased biological samples and to continue to develop methods to selectively harvest targeted surpluses of chinook, chum and marked coho for food, social and ceremonial purposes and potential ESSR surpluses. Catch information is currently being collected.

Recreational

WCVI Chum were open all year with a limit of four (4) per day. There is a minimum size limit of >30cm. WCVI recreational anglers kept 42 chum in the 2004 WCVI sport fishery.

PST Regime	Gear	Fishery Area	Numbers	
			Kept	Released
Recreational	Outside Sport	WC AABM	11	0
Recreational	Inside Sport	WC ISBM	31	0

Commercial

Nitinat

Gill nets opened for 34 hours on September 28 inside the 1 mile boundary between Pachena Point and dare Point. This opening was extended until the evening of October 4. The fishery re-opened on October 9 in the same area. This fishery was extended until the evening of October 13. Gill nets re-opened on October 16 inside the 2 mile boundary between Pachena Point and Bonilla Points. This fishery was extended until the evening of October 20 after which there were no further gill net openings. The maximum fleet on any day was 51 vessels. The total gill net catch is estimated to be 115,709.

Seines opened for 58 hours on October 29 and this opening was extended until the evening of November 4. There were 27 seines on the first day with only 1 seine fishing after November 1. This vessel had mechanical problems and there was no fishing on November 3 and 4. The total seine catch is estimated to be 57,325.

Seine assessment vessel payment catches totalled approximately 7,000 chum salmon.

Nootka / Tlupana

Gill nets opened for 10.5 hours in Outer Nootka on September 21 with a modified boundary closing off the southern shore of the approach to Muchalat Inlet. Due to the small fleet size there was a second day on the 22nd with the same boundary. The following week there also were 2-10.5 hour fisheries in Outer Nootka on September 28 and 29, with the southern boundary moved back to the Sub area boundary. Outer Nootka then opened for 1-10.5 hour day on October 5. This was followed by one more day in Outer Nootka and then 5 days in Tlupana (10.5 hours/day) due to strong test results. Outer Nootka re-opened on October 12 and 13 (10.0 hours/day) followed by 2-10 hour days in Tlupana. There were then 3-10.0 hour days commencing October 19. On the final 10.0 hour day on October 26 there was no gear left so the fishery was closed. An estimated 120,986 chum were caught in Nootka Sound this season.

Coho retention was permitted in Area 25 gill net chum fisheries this year with an estimated catch of 2,497.

Seine assessment payment catch total 42,223 chum. There were no gill net test fisheries this year.

Barkley Sound and Esperanza Inlet Assessment Fisheries

Small assessment fisheries were held in Barkley Sound and Esperanza Inlet in 2004 to assess the feasibility of harvesting low levels of chums from areas that have not been fished for many years. A limited number of boats (maximum 8 in Barkley and 5 in Esperanza) were selected to fish 1 to 2 days, (some additional days were allowed in season in both areas), per week. The majority of vessels fished in pre-determined zones on the first day with the remainder of the fleet free to fish in zones of their own selection. On the second or subsequent days all vessels were free to choose among the zones. Coho were allowed to be retained. One onboard monitor was in each area each week. These fisheries started on September 28 and continued until October 21.

The Barkley Sound catch totalled 12,080 chums and 136 coho while the Esperanza catch was 20,500 chum and 281 coho.

Stock Status

Nitinat total returns for 2004 were forecasted to be 690k chum. The main brood year production was 5.2 million eggs. The Nitinat area brood escapement was 22,000 spawners. Historical escapement have been variable, however, the returns are heavily subsidized by hatchery production. This years main brood year returns were expected to be low, as the escapement and production was well below average. However, age 3 and 5 year old brood years are expected to assist the low expected returns. Gillnet test fishing commenced early October in Nitinat Lake and ending in early November. Seine test fishing in the marine areas commenced early October and ended late October. Early

enumeration of chum for Nitinat River was 122,000. The final escapement estimate is not yet available, but is expected to reach near the escapement target of 175,000. Commercial fisheries have closed for the balance of the 2004 season. Stock assessment (primarily escapement enumeration) for Area 21 streams are currently still in progress...

The total return to Nootka (Area 25) is forecasted at 160,000 which provide a harvest of 32,000. Nootka Sound stocks are augmented by the Conuma hatchery, which produce both chum and Chinook. The approximate 20% harvest strategy which was initiated in the early 1990's is currently under review. Escapement to individual streams is highly variable. The long term escapement trend (since the mid 1950's) suggests the wild stocks are stable. The escapement trend for the enhanced area streams suggest a slight increase over a more recent hatchery period (1978). Test fishing by seine commenced in early October and continues until the end of October. This years escapement (2004), are currently still being monitoring, but early indications suggest a reasonably good return.

Other returns to non-enhanced systems continued to be monitored. Early indications with several river systems in Area 23 and 24 currently show favourable returns.

Table 25. Preliminary 1994 to 2004 Catches in Canadian Treaty Limit Fisheries.

Fisheries/Stocks	Species	2004 #	2003	2002	2001	2000	1999	1998	1997	1996	1995	1994
Stikine River (all gears)	Sockeye	84886	58784	17,294	25,600	27,468	38,055	43,803	65,559	74,281	53,467	45,095
	Coho	275	190	82	233	301	181	726	401	1,404	3,418	3,381
	Chinook-large	3857	1396	1,362	1,480	3,086	2,916	2,164	4,483	2,471	1,646	1,790
	Chinook-jack	2574	1052	578	103	628	1,264	423	286	421	860	350
Taku River (commercial gillnet)	Sockeye	19860	32,730	31,053	47,660	28,009	20,681	19,038	24,003	41,665	32,640	28,762
	Coho	5954	3,168	3,082	2,568	4,395	4,416	5,090	2,594	5,028	13,629	14,531
	Chinook-large	2074	1,894	1,561	1,458	1,576	908	1,107	2,731	3,331	1,577	2,065
	Chinook-jack	334	547	291	118	87	257	227	84	144	298	235
Areas 3 (1-4)* (commercial net)	Pink	402,459	667,103	876,631	473,318	127,000	2,162,280	61,000	329,000	987,000	2,613,000	262,000
Area 1 (commercial troll)	Pink	27,751	98,347	41,418	175,000	28,295	25,000	0	261,000	732,000	1,284,000	220,000
North Coast** (troll + sport)	Chinook	231,319	191,657	141,848	43,500	32,048	70,701	144,650	145,568	26,900	119,100	241,000
West Coast Vancouver Island (troll + sport)	Chinook	157,319+74,000	137,357+54,300	94,748+47,100								
Fraser River (Canadian commercial catch)	Sockeye	211,333	175,821	22,009	36,474	37,200	31,100					
Fraser River Stocks (US commercial catch)	Sockeye	168,837+42,496	151,826+23,995	128,798	54,770	63,400	6,500	10,284	51,400	0	81,000	146,000
West Coast Vancouver Island (commercial troll)	Pink	1,993,800	1,042,986	2,182,700	295,000	953,000	54,000	1,295,000	8,737,000	1,019,000	903,000	9,800,000
Johnstone Strait (clockwork catch)***	Pink	0	114,918	0	579,000		3,000	0	3,660,000	0	3,777,000	0
	Sockeye	192,200	244,000	434,600	240,000	494,000	41,000	707,000	1,578,000	257,000	415,000	2,100,000
	Coho	0	773,000	0	427,000		3,000	0	1,565,000	0	1,919,000	0
	Chum	1,089,100	1,026,029	700,000	236,000	161,000	41,411	1,820,000	104,593	101,971	269,000	1,295,600

2004 CATCHES ARE PRELIMINARY AND ARE BASED ON IN-SEASON TALLIES, ON-THE-GROUND COUNTS, DOCKSIDE TALLIES AND ABORIGINAL LANDING SLIPS, FISH SLIP DATA, CREEL SURVEYS AND LOGBOOKS.

* AREA 5-11 CATCHES INCLUDED PRIOR TO 1995 AND EXCLUDED FROM 1995 TO 1998 INCLUSIVE. NOT PART OF 1999 ANNEX IV PROVISIONS.

** NORTH COAST CATCH EXCLUDES TERMINAL EXCLUSION CATCHES OF 6,000 (91), 6,100 (92), 7,400 (93), 6,400 (94), 1,702 (95), 16,000 (96), 5,943 (97), and 2,182 in 1998. NO TERMINAL EXCLUSION IN THE 1999 AGREEMENT - COVERED UNDER THE AABM ARRANGEMENT. CENTRAL COAST AREAS NOT PART OF 1999 ANNEX IV PROVISIONS.

*** CANADIAN CLOCKWORK CATCH INCLUDES COMMERCIAL, IFF AND TEST FISH CATCHES IN AREAS 11-13 FOR 1991-94 INCLUSIVE, AND IN AREAS 12-13 FOR 1995 TO 2004 INCLUSIVE.

NOTE: BOLD LINE BETWEEN 1998 AND 1999 INDICATES THAT 1999 CATCHES ARE REPORTED ACCORDING TO FISHERIES/STOCKS UNDER THE 1999 ANNEX IV PROVISIONS.

C. 2004 POST-SEASON REPORT FOR UNITED STATES SALMON FISHERIES OF RELEVANCE TO THE PACIFIC SALMON COMMISSION

Northern Boundary Area Fisheries

District 104 Purse Seine Fishery

The June 30, 1999 revision of the Pacific Salmon Treaty (PST) Agreement calls for the implementation of abundance based management in the District 104 purse seine fishery. The agreement allows the District 104 purse seine fishery to harvest 2.45 percent of the Annual Allowable Harvest (AAH) of Nass and Skeena sockeye prior to statistical week 31. The AAH is calculated as the total run of Nass and Skeena sockeye salmon minus either the escapement requirement of 1.1 million (200,000 Nass and 900,000 Skeena) or the actual inriver escapement, whichever is less.

The District 104 purse seine fishery opens the first Sunday in July; in 2004 the initial opening was July 4 (Week 28). The pre-Week 31 fishing plan for District 104 was based on the preseason Canadian DFO forecast returns of 756,000 Nass and about 1.2 million Skeena sockeye salmon. Management actions took into account an apparent "underage" of sockeye salmon from the 1999 through 2003 seasons.

In the 2004 treaty period 30,758 sockeye were harvested in: 1) two 10-hour openings in Week 28; 2) two 12-hour openings in Week 29; and 3) two 12-hour and one 39-hour openings in Week 30 (Table 1). The number of purse seine vessels fishing ranged from 3 to 14 in individual openings during the period covered by the Treaty. In past years 60% to 80% of these sockeye have been of Nass and Skeena origin. Thus, we would anticipate that between 18,455 and 24,606 Nass and Skeena sockeye were harvested in the District 104 purse seine fishery during the treaty period. The final targeted number of Nass and Skeena sockeye, and the actual catch by stock, will not be available until catch, escapement, and stock composition estimates are finalized for the year.

While other purse seine fisheries are not bound by the Treaty, the fleet moves freely between districts, so seining opportunities elsewhere can affect the catch and effort in District 104.

The average numbers of hours, boats, days, and boat-days fished pre-Week 31 in District 104 since the Pacific Salmon Treaty was signed in 1985 are down 55%, 50% and 79% respectively compared to the 1980-1984 period (Table 2). The pre-Week 31 Treaty-period sockeye harvest is also down 30% despite a 275% increase in the average sockeye catch-per-boat-day since 1984.

In 2004 the District 104 purse seine fishery harvested 4,144,468 pink salmon, 349,139 sockeye, 89,881 coho, 200,144 chum, and 23,621 Chinook salmon. While the number of boats fishing in District 104 rose to low of 60, less than half the 1985-2002 average. The 2004 sockeye catches were 59%, coho catches were 62% pink catches were 40%, and chum catches were 52% of their respective 1985-2003 averages.

Table 1. Catch and Effort in the Alaska District 104 purse seine fishery by opening, 2004.

Week/Opening	Start/Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Hours
28	7/4/04	476	2,454	1,026	4,676	4,507	14	10
28B	7/4/04	84	1,047	1,461	5,112	759	8	10
29	7/11/04	135	1,769	1,929	11,704	1,290	5	12
29B	7/11/04	646	3,087	3,327	11,085	2,160	12	12
30	7/18/04	1,158	2,450	3,936	14,235	2,058	9	12
30B	7/18/04	584	1,598	2,238	14,440	2,222	3	12
30C	7/18/04	983	18,353	11,254	146,143	15,315	10	39
31	7/25/04	1,698	26,862	17,846	233,831	12,386	25	39
31B	7/25/04	870	17,681	2,854	131,460	6,552	20	15
31C	7/25/04	1,034	23,935	2,781	169,750	11,421	21	15
32	8/1/04	643	7,085	1,366	77,552	4,297	16	15
32B	8/1/04	1,631	23,021	4,209	231,693	11,356	24	15
32C	8/1/04	1,106	12,437	2,093	185,306	9,691	25	15
32D	8/1/04	1,549	19,928	4,164	320,367	20,933	32	15
32E	8/1/04	479	8,554	1,467	153,234	9,326	17	15
32F	8/1/04	1,571	12,997	1,645	194,070	9,760	24	15
33	8/8/04	1,877	22,803	2,841	350,936	8,625	25	15
33B	8/8/04	2,716	16,652	3,268	263,994	6,264	24	15
33C	8/8/04	2,108	17,814	2,252	296,452	5,508	25	15
33D	8/8/04	2,273	17,300	3,024	361,490	7,514	30	15
33E	8/8/04	0	21,223	3,318	323,974	12,052	31	39
34	8/15/04	0	25,030	4,698	333,086	16,524	35	39
34B	8/15/04	0	38,454	5,970	277,285	15,982	20	87
35	8/22/04	0	6,605	914	32,593	3,642	11	87
36	8/29/04	0	0	0	0	0	0	87
Total Weeks 28-30		4,066	30,758	25,171	207,395	28,311	24	107
Total Weeks 31-36		19,555	318,381	64,710	3,937,073	171,833	54	558
Total Season		23,621	349,139	89,881	4,144,468	200,144	60	665

Table 2. Fishing opportunity, effort, and sockeye harvests prior to Week 31 in the District 104 purse seine fishery, 1980 to 2004.

Year	Hours Fished	Boats Fished	Fraction Days Fished (1d=15hr)	Boat-Days Fished (Fraction Boats and Fraction Days)	Sockeye Harvest	Sockeye Catch Boat-Day
1980	207	244	13.8	2,877	266,273	93
1981	132	212	8.8	1,108	185,188	167
1982	117	255	7.8	1,435	213,150	149
1983	108	241	7.2	1,211	168,806	139
1984	132	174	8.8	805	103,319	128
1985	84	141	5.6	502	100,590	200
1986	108	194	7.2	968	91,320	94
1987	90	134	6	457	72,385	158
1988	108	210	7.2	994	248,789	250
1989	84	135	5.6	438	157,566	360
1990	42	171	2.8	276	169,943	615
1991	41	134	2.7	243	98,583	406
1992	29	108	1.9	142	79,643	561
1993	45	171	3	343	163,189	476
1994	55	84	3.7	202	158,524	783
1995	58	109	3.9	218	71,376	328
1996	31	113	2.1	128	215,144	1,684
1997	56	159	3.7	409	572,942	1,402
1998	32	78	2.1	89	17,394	196
1999	30	38	2	44	7,664	174
2000	81	66	5.4	192	48,969	255
2001	50	95	3.3	182	203,090	1,115
2002	72	44	4.8	124	26,554	215
2003	52	40	3.5	151	84,742	561
2004	107	24	7.1	102	30,758	302
Avg. 80-84	139	225	9	1,487	187,347	135
Avg. 85-04	63	112	4	310	130,958	507
% Change	-55%	-50%	-55%	-79%	-30%	275%

District 101 Drift Gillnet Fishery

The June 30, 1999 PST agreement calls for abundance based management of the District 101 (Tree Point) drift gillnet fishery. The agreement specifies a harvest of 13.8 percent of the AAH of the Nass sockeye run. For the 2003 season, DFO forecast a total run of 686,000 Nass River sockeye salmon. The AAH is calculated as the total run of Nass sockeye salmon minus either the escapement requirement of 200 thousand or the actual inriver escapement, whichever is less.

The District 101 drift gillnet fishery opens by regulation on the third Sunday in June. During the early weeks of the fishery, management is based on the run strength of Alaska wild stock chum and sockeye salmon and on the strength of the Nass River sockeye salmon. Beginning in the third week of July, when pink salmon stocks begin to enter the fishery in large numbers, management emphasis shifts by regulation to that species. By regulation, the

District 101 Pink Salmon Management Plan sets gillnet fishing time in this district in relation to the District 101 purse seine fishing time when both fleets are concurrently harvesting the same pink salmon stocks.

The District 101 gillnet fishery was initially opened Sunday June 20 (Week 26) for a 4-day fishery with weekly 4-day fisheries continuing through Week 29. Beginning July 18 (Week 30) with the implementation of the Pink Salmon Management Plan, the fishery was open 5-days a week through September 4th (Week 36). The fishery was then open 3-days a week for the remaining three weeks of the season closing at the end of September. Catches of sockeye, chum, pink and coho salmon were below the 1985-2003 average. The cumulative sockeye harvest prior to the initiation of the Pink Salmon Management Plan in Week 30 was 101,725 fish, or about 71% of the season's total sockeye harvest.

The weekly gillnet sockeye catch in District 101 was above average early in the season, falling to below average beginning in early July. Coho catch was about average until August when it fell below average for the remainder of the season. Pink catch was below average throughout most of the season. Chum catches were about average until September when they rose to above average for the remainder of the season.

During the period (Weeks 30-36) when the Pink Salmon Management Plan was in effect catches of sockeye, coho, pink and chum salmon were generally below average.

Beginning on September 5 the fishery was managed on the strength of fall chum and coho returns; fall chum catch was above average while fall coho catches were below average. The below average catches are more a reflection of the reduced effort at Tree Point in 2004 more than a resource problem.

A total of 142,357 sockeye salmon were harvested in the District 101 drift gillnet fishery in 2004 (Table 3). The sockeye harvest and number of boat-hours and boats fished was below the 1985-2003 average and the hours fished was above average. The number of boats fishing annually since the Treaty was signed has dropped from a high of 198 in 1986 to 71 in 2003. The final number of Nass River sockeye harvested at Tree Point will not be available until catch, escapement, and stock composition estimates are finalized for the 2004 season.

Table 3. Weekly catch and effort in the Alaska District 101 commercial drift gillnet fishery, 2004.

Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Hours
26	20-Jun	560	21,905	220	92	9,661	53	96
27	27-Jun	596	47,441	483	1,562	16,607	55	96
28	4-Jul	316	16,712	1,880	39,369	22,064	46	96
29	11-Jul	285	15,667	1,627	41,837	30,791	44	96
30	18-Jul	98	8,470	783	51,033	17,133	40	120
31	25-Jul	55	8,703	3,006	67,290	29,375	31	120
32	1-Aug	29	10,567	2,338	55,391	21,930	35	120
33	8-Aug	15	8,581	2,001	75,692	8,430	36	120
34	15-Aug	6	1,512	890	38,054	8,070	27	120
35	22-Aug	9	1,837	2,459	32,782	21,746	26	120
36	29-Aug	7	616	2,044	3,974	26,383	25	120
37	5-Sep	15	215	3,370	353	41,681	24	96
38	12-Sep	5	106	4,647	12	29,051	27	96
39	19-Sep	2	15	3,721	0	7,827	22	96
40	26-Sep	0	10	1,422	0	969	5	96
Total		1,998	142,357	30,891	407,441	291,718	61	1,608

Table 4. Annual sockeye harvest in the Alaska District 101 drift gillnet fishery, 1985 to 2004, and comparison of sockeye harvest and effort (number of boats, hours, and boat-hours fished) between Statistical Weeks 26 and 35 when sockeye salmon are most abundant in this district.

Year	Annual Sockeye Harvest	Catch and Effort Between Weeks 26 and 35			
		Sockeye Harvest	Boats	Hours	Boat- Hours
1985	173,100	159,021	153	1,032	157,865
1986	145,699	143,286	198	960	190,044
1987	107,503	106,638	170	615	104,519
1988	116,115	115,888	187	756	141,338
1989	144,936	130,024	176	1,023	180,016
1990	85,691	78,131	150	840	125,969
1991	131,492	123,508	130	984	127,920
1992	244,649	243,878	118	1,080	127,416
1993	394,098	390,299	148	1,032	152,733
1994	100,377	98,725	142	984	139,700
1995	164,294	151,131	128	1,008	129,024
1996	212,403	175,569	129	1,104	142,408
1997	169,474	152,662	128	1,008	129,024
1998	160,506	159,307	124	1,044	129,454
1999	160,028	158,268	118	1,032	121,776
2000	94,651	94,399	95	912	86,640
2001	80,041	62,129	73	1,020	74,445
2002	120,353	106,360	68	1,008	68,544
2003	105,263	96,921	68	1,104	75,058
Average					
1985-2003	153,193	144,534	132	976	126,521
2004	142,357	141,395	61	1,104	67,332

Escapements

The total pink salmon escapement index of 15.8 million for all of Southeast Alaska ranked 8th highest since 1960. This is slightly below the 2002 parent year index of 17.4 million, and 15% below the recent 10-year average of 18.2 million. Biological escapement goals were met for all 3 subregions of Southeast Alaska (Table 5). Escapement indices were near the upper end of the escapement goal range for Southern Southeast Alaska and Northern Southeast Alaska Inside regions, and slightly higher than the upper range of the goal for Northern Southeast Alaska Outside region. Escapement targets were met for 12 of 13 districts that have escapement targets. The exception was District 114, which has a strong odd year cycle and has never met the management target on an even year. Management targets were met for all but 4 of the 44 stock groups.

Table 5. Southeast Alaska pink salmon indices, and escapement goals (millions).

Sub-region	2004 Pink Salmon Index	Escapement Goal	Escapement Goal
		Lower Bound	Upper Bound
Southern Southeast	8.5	4.0	9.0
Northern Southeast Inside	5.2	2.5	5.5
Northern Southeast Outside	2.1	0.75	1.75

The Hugh Smith Lake adult sockeye escapement was just under 20,000, and exceeded the upper end of the recently established biological escapement goal range of 8,000 to 18,000 adult sockeye salmon. The escapement of sockeye salmon into McDonald Lake was estimated to be 21 thousand fish, based on the expanded foot survey index. This is the smallest estimated escapement since 1979, and the 3rd year in the past 4 that the escapement has been below the escapement goal range of 65,000 to 85,000 sockeye salmon. Klawock Lake had a minimum weir count of 11,000+ sockeye salmon, however, a mark-recapture estimate has not been finalized.

Escapements of summer and fall run chum salmon appeared to be about average in 2004, and were up from 2003. The escapement of chum salmon into Fish Creek at the head of Portland Canal was estimated to be 91 thousand based on expanded foot survey counts; this was well above the long-term average of 24 thousand, and continued a trend of improving chum salmon escapements there since 1997.

Transboundary Area Fisheries

Stikine River Area Fisheries

The 2004 harvest in the District 106 commercial gillnet fishery included 2,735 Chinook, 116,259 sockeye, 138,631 coho, 245,237 pink, and 110,574 chum salmon (Table 6). District 106 catches of all species except Chinook were below the 1994-2003 average. Lower catches can be partially attributed to low effort in the district. An estimated 36% of the coho salmon harvest was of Alaskan hatchery origin.

Table 6. Weekly salmon catch in the Alaskan District 106 commercial drift gillnet fisheries, 2004. Catches do not include Blind Slough terminal area harvests.

Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Permits	Days	Permit-Days
25	13-Jun	195	1,204	1,057	159	968	16	3	48
26	20-Jun	465	8,853	4,479	2,419	3,323	33	3	99
27	27-Jun	801	27,770	16,933	7,546	6,294	56	5	280
28	4-Jul	287	17,814	12,611	6,599	5,093	67	3	201
29	11-Jul	383	20,900	14,748	27,221	13,165	68	4	272
30	18-Jul	172	9,922	7,325	15,253	7,825	70	3	210
31	25-Jul	227	9,713	7,361	26,000	12,366	70	2	140
32	1-Aug	69	13,774	7,618	50,773	14,465	50	4	200
33	8-Aug	20	3,906	5,402	62,275	7,100	46	4	184
34	15-Aug	18	866	3,090	15,517	2,784	27	4	108
35	22-Aug	20	582	5,487	20,903	6,841	46	4	184
36	29-Aug	23	450	9,145	8,804	9,743	64	3	192
37	5-Sep	23	408	14,446	1,728	12,430	83	2	166
38	12-Sep	18	71	15,488	37	5,631	66	3	198
39	17-Sep	8	24	9,906	3	2,080	53	3	159
40	26-Sep	4	2	3,313	0	440	29	3	87
41	3-Oct	2	0	222	0	26	4	2	8
Total		2,735	116,259	138,631	245,237	110,574		55	2,735
94-03 Avg.		769	154,336	193,940	413,479	262,237		44	3,908
04 % of Avg.		356%	75%	71%	59%	42%		124%	70%

In the 2004 District 108 fishery, 7,410 Chinook, 103,392 sockeye, 26,617 coho, 20,439 pink, and 37,996 chum salmon were harvested (Table 7). Chinook, sockeye and coho catches were well above average, while chum and pink catches were below average. An estimated 9% of the coho catch was of Alaskan hatchery origin.

Table 7. Weekly salmon catch and effort in the Alaskan District 108 commercial drift gillnet fishery, 2004. The permit days are adjusted for boats that fished only the midweek openings.

Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Permits	Days	Permit-Days
25	13-Jun	1,897	1,343	28	22	33	31	3	93
26	20-Jun	1,766	17,978	744	27	755	55	5	174
27	27-Jun	1,509	18,612	611	50	755	48	5	240
28	4-Jul	1,193	33,591	812	1,984	7,013	83	5	282
29	11-Jul	485	23,351	1,407	5,371	9,298	61	4	244
30	18-Jul	480	7,087	670	4,866	7,379	49	3	147
31	25-Jul				Closed				
32	1-Aug				Closed				
33	8-Aug	6	608	618	1,927	4,503	16	4	64
34	15-Aug	0	382	1,129	2,177	1,664	21	4	84
35	22-Aug	21	256	3,719	3,543	2,007	27	4	108
36	29-Aug	20	134	3,349	420	1,291	28	3	84
37	5-Sep	9	35	2,281	47	829	22	2	44
38	12-Sep	3	12	6,855	5	1,829	49	3	147
39	17-Sep	5	3	3,519	0	545	27	3	81
40	26-Sep	15	0	771	0	79	8	3	24
41	3-Oct	1	0	104	0	16	4	2	8
Total		7,410	103,392	26,617	20,439	37,996		53	1,824
94-03 Avg.		1,151	53,861	20,788	36,559	51,420		46	1,751
04 % of Avg.		644%	192%	128%	56%	74%		115%	104%

Harvest sharing of Stikine sockeye stocks is based on inseason abundance forecasts produced by the Stikine Management Model (SMM) (Table 8). The marine and inriver catches of planted Tuya fish were estimated from analysis of otoliths for thermal marks. Egg diameter analysis of inriver catches was used to estimate the relative abundances of Tahltan and Mainstem fish to Tuya fish in the Stikine River. The historical average weekly stock compositions were used to estimate the harvests of Tahltan and Mainstem Stikine sockeye salmon stocks in marine harvests. Based on these analyses and ratios, the Sumner Strait fishery (subdistricts 106-41 & 42) harvested 31,000 Stikine sockeye salmon, 36.1% of the total sockeye harvest in those subdistricts. The Clarence Strait fishery (subdistrict 106-30) harvested an estimated 2,000 Stikine sockeye salmon, 6.5% of the harvest in that subdistrict. It is estimated that the District 108 fishery harvested 81,000 Stikine fish, 78.4% of the total sockeye harvest in that area. 2004 was the first year a Federal subsistence fishery targeting sockeye was conducted on the Stikine River. A reported 243 sockeye were harvested, well below the 600 sockeye cap. An estimated 113,800 Stikine sockeye salmon were harvested in commercial gillnet fisheries from both districts, representing 51.8% of the total sockeye catch. Of these Stikine sockeye salmon, an estimated 42,900 fish were produced by the joint U.S./Canada fry-planting projects on the Stikine River.

Preliminary postseason run reconstruction estimates (Table 9) differ from the inseason management model estimates (Table 8).

Table 8. Weekly forecasts of run size and total allowable catch for Stikine River sockeye salmon as determined inseason by the Stikine Management Model, 2004.

Stat. Week	Start Date	Forecasts		TAC		Cumulative Catch ^c	
		Run Size ^a	TAC	U.S.	Canada	U.S.	Canada ^b
25	13-Jun	232,717	172,595	86,297	86,297	739	1
26	20-Jun	232,717	172,595	86,297	86,297	10,467	281
27	27-Jun	232,717	172,595	86,297	86,297	28,789	5,447
28	4-Jul	160,062	101,201	50,600	50,600	55,494	22,607
29	11-Jul	158,560	133,316	66,658	66,658	77,692	45,277
30	18-Jul	192,183	166,939	83,470	83,470	107,843	61,979
31	25-Jul	257,910	211,232	105,616	105,616	109,313	68,796
32	1-Aug	283,690	226,432	113,216	113,216	111,468	78,429
33	8-Aug	298,746	241,452	120,726	120,726		

^a U.S. forecasts were as follows: the preseason forecast was used for weeks 25, 26, and 27; the lower river commercial fishery CPUE data for the remainder of the sockeye season. (Canada independently generates forecasts that may use different criteria in some weeks.)

^b Cumulative catch for Canada does not include approximately 1,676 Tuya ESSR fishery catch.

^c Cumulative catch only includes catches through SW 32.

The estimated Stikine sockeye run was 307,400 fish (Table 9). The estimated spawning escapement of sockeye salmon past Tahltan Lake weir was 63,310 fish, of which 4,263 were taken for broodstock and 400 for biological samples. This is well above the desired point goal of 24,000 spawners. The estimated spawning escapement to the Stikine River mainstem was approximately 38,000 fish, which is also well above the desired point goal of 30,000 fish.

Table 9. Preliminary post season Stikine River run reconstruction, 2004

	Tahltan	Mainstem	Total	Tuya	Tahltan		Total	All	All
					Wild	Hatchery			
	Stikine	Planted	Wild						
Escapement ^a	63,310	38,058	101,368	5,446	38,176	25,134	106,814	30,580	76,234
ESSR Catch ^b	0			1,676			1,676	1,676	0
Biological Samples	420		400		241	159	400	159	241
Broodstock	4,243		4,263		2,571	1,692	4,263	1,692	2,571
Natural Spawning	58,647	38,058	96,705	0	35,364	23,283	96,705	23,283	73,422
Excess ^c			0	3,770			3,770	3,770	
Canadian Harvest									
Indian Food	5,985	1,915	7,900	196	3,609	2,376	8,096	2,572	5,524
Upper Commercial	429	49	478	15	259	170	493	185	308
Lower Commercial	55,880	19,497	75,377	2,153	33,945	21,936	77,530	24,089	53,442
Total	62,294	21,461	83,755	2,364	37,813	24,482	86,119	26,846	59,274
% Harvest	43%	45%	44%	29%					
Test Fishery Catch	257	153	410	10	156	101	420	111	309
Inriver Run	125,861	59,672	185,533	7,810	76,145	49,717	193,343	57,527	135,817
U.S. Harvest ^a									
106-41&42	24,759	3,967	28,726	2,252	14,326	10,433	30,978	12,685	18,293
106-30	1,111	839	1,950	22	820	291	1,972	313	1,659
108	55,924	21,510	77,434	3,617	29,709	26,215	81,051	29,832	51,219
Sub. Fishery	173	65	238	5	113	60	243	65	178
Total	81,794	26,381	108,175	5,896	44,968	36,999	114,071	42,895	71,349
% Harvest	57%	55%	56%	71%					
Test Fishery Catch	0	0	0	0	0	0	0	0	0
Total Run	207,655	86,053	293,708	13,706	121,113	86,716	307,414	100,422	207,166
Escapement Goal	24,000	30,000	54,000	0					
Terminal Excess ^d				1,601					
Total TAC	183,398	55,900	239,298	12,105			251,403		
Total Harvest ^e	144,345	47,995	192,340	9,946			202,286	71,528	130,932
Canada TAC	91,699	27,950	119,649	6,052			125,701		
Actual Catch ^{fg}	62,294	21,461	83,755	2,364			86,119	26,846	59,274
% of total TAC	67.9%	76.8%	70.0%				68.5%		
U.S. TAC	91,699	27,950	119,649	6,052			125,701		
Actual Catch ^{fg}	81,794	26,381	108,175	5,896			114,071	42,895	71,349
% of total TAC	89.2%	94.4%	90.4%				90.7%		

Taku River Area Fisheries

The traditional District 111 commercial drift gillnet fishery salmon harvest totaled 2,291 Chinook, 241,219 sockeye, 45,294 coho, 150,407 pink, and 131,486 chum salmon (Table 10). Harvest of Chinook, coho, pink and chum salmon was 78%, 101%, 136% and 42% of the ten-year (1994-2003) averages, respectively. The harvest of sockeye salmon was 161% of average. Hatchery stocks contributed significantly to the harvest of both sockeye and chum salmon, and minor numbers to the harvest of other species.

Table 10. Weekly salmon harvest in the Alaskan District 111 traditional commercial drift gillnet fishery, 2004.

Statistical Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Days	Boat Days ^b
25									
26	20-Jun	864	6,174	4	7	1,557	54	3.0	162
27	27-Jun	563	9,808	9	547	4,527	66	4.0	264
28	4-Jul	244	13,201	38	4,449	15,931	59	4.0	236
29	11-Jul	144	17,197	34	20,226	34,829	58	3.0	174
30	18-Jul	75	17,244	1,104	17,379	26,524	76	3.0	228
31	25-Jul	97	24,198	3,212	22,637	29,814	108	4.0	570
32	1-Aug	183	49,608	1,944	22,637	8,445	116	4.0	464
33	8-Aug	77	65,524	2,637	23,736	3,231	116	4.0	464
34	15-Aug	26	24,870	2,944	9,630	1,443	81	4.0	324
35	22-Aug	2	3,718	4,935	308	513	37	3.0	111
36	29-Aug	5	1,341	8,160	3	914	41	3.0	123
37	5-Sep	2	219	3,780	0	1,101	31	4.0	124
38	12-Sep	0	165	10,968	0	1,175	32	4.0	128
39	19-Sep	0	45	4,030	0	119	20	4.0	80
40-42	26-Sept	0	0	500	0	14	4	12.0	28
Total		2,291	241,219	45,294	150,407	131,486			633,480
1994-2003 Average		2,937	149,455	44,881	110,218	132,560			533,593
2004 as % of 10-Year Avg.		78%	161%	101%	136%	42%			119% 97%

^a The days open listed in this table reflect open fishing periods for all waters of District 11 except Speel Arm THA (111-33). Taku Inlet (111-32) was open for two days each week during weeks 30-32 and three days in week 33.

The Speel Arm Terminal Harvest Area (THA) was open for 36 days in SW33 through SW38 to target returning DIPAC Snettisham hatchery sockeye. The harvest from the Speel Arm THA contributed an additional 54 Chinook, 42,502 sockeye, 480 coho, 4,368 pink, and 370 chum salmon to the common property drift gillnet fishery in District 111 in 2004.

Approximately 76% of the Chinook salmon were harvested from Taku Inlet and 24% were harvested from Stephens Passage. Alaskan hatchery fish contributed 479 fish as estimated by coded wire tag (CWT) analysis, or approximately 21% of the harvest. The Taku River stock assessment program estimated the above-border run-size at approximately 70,600

large fish, 134% of the ten-year (1994-2003) average. The escapement goal range is from 30,000 to 55,000 large Chinook salmon.

The total Taku River sockeye salmon run was estimated at 204,859 fish (Table 11). Based on the escapement goal midpoint of 75,000 wild Taku River sockeye, the TAC was 129,859 fish. The U.S. TAC was 105,723 Taku River sockeye (81.4% of the TAC). It is estimated that the total U.S. harvest of Taku River sockeye salmon was 77,175 fish, 73% of the TAC, and 32% of the total sockeye harvest in the District. Sockeye salmon produced from a joint U.S./Canada fry-planting program at Tatsamenie Lake contributed an estimated 676 fish, or 0.3% of the total sockeye catch. Additionally, an estimated 151,141 Snettisham Hatchery sockeye salmon were harvested in common property traditional fisheries in District 111, of that total approximately 59,303 were harvested inside Port Snettisham.

The preliminary estimated above-border in-river wild Taku River sockeye run, based on mark-recapture estimates at Canyon Island, was 127,684; 96% of the 10-year (1994-2003) average of 132,509. Subtracting the Canadian catch of wild Taku River sockeye salmon (19,565) and the Canadian test fishery catch of 80 sockeye salmon the escapement of wild Taku River sockeye salmon was 108,039; 144% of the escapement goal of 75,000. There was no food fishery catch of sockeye salmon in 2004. Sockeye escapements to King Salmon, Kuthai, Little Trapper and Tatsamenie Lakes based on weir counts were 5,005, 1,578, 9,613, and 1,951 sockeye salmon, respectively. Escapements of sockeye salmon to Port Snettisham systems were fair, with 7,446 counted through a weir at Speel Lake and aerial surveys estimated a minimum of 5,000 sockeye salmon in Crescent Lake.

Table 11. Preliminary Taku sockeye salmon run reconstruction, 2004. {Estimates do not include spawning escapements below the U.S./Canada border.

	Taku ^a
Estimated Taku In-river Run	127,684
Estimated U.S. Catch Taku fish	77,175
Total Run	204,859
Escapement Goal	75,000
TAC	129,859
U.S. TAC	105,723
Estimated U.S. Taku Catch	77,175
Projected personal use catch	5,000
Remaining U.S. TAC	23,548
U.S. harvest share (catch/total TAC)	0.633
Canada TAC	29,673
from .18 of total TAC	24,163
from .20 of inriver run >100,000	5,537
Estimated Canada catch	19,860
Remaining Canada TAC	9,813
Canada harvest share (cat/total TAC)	0.153

^a United States and Canada TAC computations based on harvest sharing arrangement described in Annex IV, Chapter I, (3)(b)(1)(i).

Coho stocks harvested in District 111 include runs to the Taku River, Port Snettisham, Stephens Passage, and local Juneau area streams as well as Alaskan hatcheries. The coho harvest of 45,294 fish was 101% of the 10-year (1994-2003) average. Approximately 77% of the coho were harvested in Taku Inlet (below the ten-year average of 82%); 20% were harvested from Stephens Passage and 3% were harvested from inside Port Snettisham. Alaskan hatchery coho salmon contributed 2,584 fish or 6% of the District 111 harvest. Weekly coho harvests were above average during SW31, 36, 38 and 39, but below average during the remaining 13 weeks of the season. The SW38 harvest of 10,968 fish was the peak week of coho harvest for the 2004 drift gillnet fishery. For the entire season, weekly estimates of Taku River coho abundance indicated an above average run size. The final inriver abundance estimate of coho escapement above Canyon Island was 141,837 fish. The 2004 inriver abundance estimate for coho was the third highest since 1987, and approximately 165% of the 1987-2003 average. The cumulative Canadian coho harvest was 9,131. The coho escapement for the Taku River was estimated to be approximately 132,706 fish, greatly surpassing the escapement goal of 35,000.

The District 111 pink salmon harvest of 150,407 fish was 136% of the ten-year (1994-2003) average. The escapement number to the Taku River was unknown; however, the number of pink salmon passing through the fish wheels at Canyon Island was used as an index of

escapement. The 2002 (parent year) Canyon Island pink salmon fish wheel catch was 5,672. The 2004 Canyon Island pink salmon fish wheel catch of 8,464 was 65% of the 1986-2002 even-year average.

The catch total of 131,486 chum salmon was 42% of the ten-year (1994-2003) average, and was comprised almost entirely of summer run fish (96%). The summer chum run is considered to last through mid-August (week 33) and is comprised mostly of domestic hatchery fish, with small numbers of wild stock fish contributing. Chum salmon returning both to DIPAC hatcheries in Gastineau Channel and to the DIPAC remote release site at Limestone Inlet contributed a major portion of the harvest, but quantitative contribution estimates are not available. Approximately 44% of the District III chum harvest was made in Taku Inlet, 54% in Stephens Passage, and 2% inside Port Snettisham. The harvest of 5,423 fall chum salmon (i.e. chum salmon caught after week 33) was 96% of the ten-year (1994-2003) average. Most of these chums are probably of wild Taku and Whiting River origin. Escapement numbers to the Taku River are unknown; however, the numbers of fall chums passing through the fish wheels at Canyon Island were used as an index of escapement. The index number for 2004, 355 fall chums, was an increase from the 250 recorded in 2003 and is 74% of the 1985-2003 average. The department conducted a radio telemetry program this year with chum released from Canyon Island and documented important spawning grounds, something not done before on this scale.

Several other fisheries in the Juneau area harvested Taku River stocks in 2004. Personal use salmon permits were issued for Taku River sockeye salmon. Estimates of the harvest in that fishery are not available at this time although a projection of 5,000 fish is included for preliminary run size projections. In 2004 an estimated 14,433 Chinook salmon were harvested by sport fisheries in the Juneau area. A number of stocks are known to contribute to the Juneau area sport fishery, including those from the Taku, Chilkat, and King Salmon rivers, and local hatchery stocks, but the major contributor of large, wild mature fish was believed to be the Taku River. Of the Chinook harvested 2,700 (19%) were estimated to be of Taku River origin based on coded wire tag analysis and maturity data.

Alsek River Area Fisheries

Although harvest sharing arrangements of Alsek salmon stocks between Canada and the U.S. have not been specified, Annex IV of the Pacific Salmon Treaty does call for a cooperative attempt to rebuild depressed Chinook and early-run sockeye stocks. Preseason expectations were for below average returns of sockeye and Chinook salmon. These expectations were based on parent-year escapements to the Klukshu River. The Alsek River commercial fishery opened on the first Sunday in June, statistical week 24 (June 6). The initial opening was extended to 48 hours. For the next two weeks of the season weekly openings were extended to 48 and 72 hours, respectively, as sockeye CPUE remained more than double the average. The fourth and fifth weekly openings were not extended beyond 24 hours when CPUE did not indicate strength to that portion of the run. During the second week of July the weekly opening was extended to 48 hours, and was then further extended to 72 hours during the third week of July as CPUE remained strong. During the final four weeks of the sockeye season fishing time was maintained at 24 hours with the exception of statistical week 33 when fishing time was extended to 48 hours. The fishery targeted coho salmon after late August and fishing times remained at three days per week for the first three weeks of the coho season. With minimal effort and good coho CPUE, fishing time was opened until further notice to

allow harvest opportunity for coho salmon. No effort was recorded on the Alsek after the first week of September.

The Dry Bay commercial set-gillnet fishery harvested 656 Chinook, 18,030 sockeye, and 2,475 coho salmon (Table 11). No pink were harvested, and the chum salmon harvest was minimal. The Chinook salmon harvest was 3% below the 1994-2003 average, the sockeye salmon harvest was 10% below average, and the coho salmon harvest was 61% below average. Very little effort was recorded during the coho season due to market conditions and the coho salmon harvest was the second lowest in the last 10 years. The number of fishing days was 76.5. The total effort expended in the fishery was 280 boat-days, 67% of the 1994-2003 average.

Table 12. Weekly catch and effort in the U.S. commercial fishery in the Alsek River, 2004.

Week	Start Date	Catch					Effort		
		Chinook	Sockeye	Coho	Pink	Chum	Permits	Days ^a	Permit
									Days
24	6-Jun	355	1,997	0	0	0	17	2	34
25	13-Jun	229	2,544	0	0	0	12	2	24
26	20-Jun	46	2,135	0	0	0	11	3	33
27	27-Jun	7	671	0	0	0	10	1	10
28	4-Jul	2	967	0	0	0	11	1	11
29	11-Jul	9	3,227	61	0	0	14	2	28
30	18-Jul	5	4,675	0	0	2	15	3	45
31	25-Jul	0	655	0	0	0	7	1	7
32	1-Aug	0	347	0	0	0	5	1	5
33	8-Aug	1	654	11	0	0	4	2	8
34	15-Aug	0	44	6	0	0	4	1	4
35	22-Aug	2	91	118	0	0	4	3	12
36	29-Aug	0	10	302	0	0	3	3	9
37	5-Sep	0	7	508	0	0	3	3	9
38-40	12-Sep	0	6	1,469	0	0	6	20.5	41
Total		656	18,030	2,475	0	2	24	48.5	280
1994-2003	Avg.	674	20,045	6,348	3	98	26	50	421
2004 % of 1994-2003 Avg.		97%	90%	39%			92%	97%	67%

^a Days above represents actual effort days. Alsek was open, but not fished, another 28 days in 2004

Southeast Alaska Chinook Salmon Fishery

The 2004 preseason Chinook salmon target harvest level was determined using the abundance index of 1.88 generated with the CTC model calibration 0404. The corresponding target harvest of 383,536 was identified using Table 1 of Chapter 3. The preliminary estimate of the 2004 Chinook salmon harvest by all Southeast Alaska fisheries was 506,145 fish (Table 13). The base harvest (total minus the add-on and terminal exclusion harvest) was 428,771 fish, 11.8% above the target harvest of 383,536.

Table 13. Chinook all-gear harvests¹ in Southeast Alaska, 1987 to 2004, and deviation from the ceiling for years for which there were ceilings. Harvests are in thousands.

Year	Total Harvest	Add-on and Terminal Exclusion Harvest	Target Treaty Harvest	Treaty Harvest	Deviation Number	Deviation Percent
1987	282.4	17.1	263.0	265.3	2.3	0.9%
1988	279.3	22.5	263.0	256.8	-7.8	-3.0%
1989	291.0	21.5	263.0	269.5	6.5	2.5%
1990	366.9	45.9	302.0	321.0	19.0	6.3%
1991	359.5	61.5	273.0	298.0	25.0	9.2%
1992	258.8	36.8	227.4	222.0	-5.4	-2.4%
1993	304.1	32.9	263.0	271.2	8.2	3.1%
1994	264.4	29.2	240.0	235.2	-4.8	-2.0%
1995	235.7	58.8		176.9		
1996	236.3	81.3		155.0		
1997	343.0	56.3		286.7		
1998	270.6	27.4	260	243.2	-16.8	-6.5%
1999	251.0	52.2	184.2	198.8	14.6	7.9%
2000	263.3	76.8	178.5	186.5	8.0	4.5%
2001	265.7	78.8	250.3	186.9	-63.4	-25.3%
2002	426.5	69.4	371.9	357.1	-14.8	-4.0%
2003	439.4	59.3	439.6	380.1	-57.4	-13.1%
2004	506.1	77.4	383.5	428.7	50.6	11.8%

¹ The actual target harvest and deviation cannot be calculated until the CTC completes the postseason calibration.

Troll Fishery

The winter troll fishery harvested 52,900 Chinook salmon from October 11, 2003 through April 20, 2004. A total of 6,200 fish were from Alaska hatcheries with 5,400 fish counting toward the Alaska hatchery add-on.

Spring fisheries were conducted prior to the July general summer opening. The spring fisheries are designed to increase the harvest of Alaskan hatchery-produced Chinook salmon by allowing trolling in small areas close to the hatchery where these fish concentrate. Terminal fisheries are a portion of the spring fisheries and occur directly in front of hatcheries or at remote release sites. While there is no ceiling on the number of Chinook salmon harvested in the spring fisheries, the take of Treaty Chinook salmon is

limited according to the percentage of the Alaskan hatchery fish taken in the fishery. The harvests in 2004 were: 1,600 fish in the terminal fisheries and 55,200 fish in the general spring fisheries. A total of 38% (21,500) of the Chinook salmon landed in these fisheries were from Alaska hatcheries of which 18,700 counted toward the Alaska hatchery add-on.

In the 2004 summer season there were two Chinook salmon retention periods: July 1-15 and August 12-15. The fishery harvested 245,000 Chinook salmon of which 9,900 fish (4.1%) were from Alaska hatcheries (8,600 counting toward the Alaska hatchery add-on).

The total harvest for the troll fishery in the 2004 accounting year was 354,600 Chinook salmon, with 321,900 counting as Treaty harvest.

Net Fisheries

Harvests of Chinook salmon in the net fisheries are incidental to the harvest of other species and only constitute a small fraction (<1.0%) of the total net harvest of all species. In 2004, the net fisheries harvested 64,000 Chinook salmon of which 40,400 counted as Treaty harvest.

Recreational Fisheries

The 2004 recreational fishery had an estimated preliminary harvest of 87,500 Chinook salmon of which 66,400 counted as Treaty harvest. The final total and Treaty harvest in the sport fishery for 2004 will be available in late fall of 2005.

Southeast Alaska Coho Salmon Fisheries

Attachment B of the June 30, 1999 U.S.-Canada Agreement relating to the Pacific Salmon Treaty specifies provisions for inseason conservation and information sharing for northern boundary coho salmon. In 2004, troll CPUE in Area 6 in the early weeks of the fishery averaged 38.6, which was above the highest specified boundary area conservation trigger of 22. The mid-July projection of region-wide total commercial harvest was greater than the 1.12 million trigger for an early region-wide troll closure, specified in Alaska Board of Fisheries regulation and the PST conservation agreement.

The all-gear catch of coho salmon totaled 3.13 million fish of which 2.86 million (91%) were taken in commercial fisheries (Table 14). Power troll weekly CPUE cumulated over the summer season was the second highest on record, lower than only 1994. Weekly CPUE was consistently above the 1990-2003 average during the chinook non-retention periods. The number of vessels participating in fall drift gillnet fisheries was similar to 2000-2003 but about 45% lower than the 1980-1995 average. The drift gillnet harvest in traditional fall fisheries was lower than averages for 1990-1999 and 2000-2003 but higher than the average for 1980-1989. Drift gillnet CPUE was below recent averages in most cases. Yakutat area runs were very strong but most (91%) of the set gillnet catch was taken from the Situk-Ahmklin system because fishing was light on more remote systems for market

reasons. The very preliminary Southeast Alaska sport catch of 269,000 fish is the 5th largest on record and 20% above the most recent 10-year average.

Wild production accounted for 2.42 million fish (85%) in the commercial catch compared with the 10-year (1994-2003) average of 2.33 million fish (80%). The proportionate hatchery contribution of 16% to the troll catch was the lowest since 1994. Escapement goal ranges were met or exceeded for all indicator stocks with goals. Exploitation rates for the four long-term indicator stocks averaged 59%, which was near the historical (1982-2003) average of 58%. Troll fishery exploitation rates ranging from 26-43% (average 33%) on three long-term inside indicator stocks were the highest since 1999. The troll exploitation rate of 64% on an outer coastal stock (Ford Arm Lake) was the second highest since 1982 and well above the 1990s average of 54%. Summer troll effort in boat-days (power troll equivalent) increased by 16% from a record low in 2003 but remained well below pre-2000 levels. The all-gear exploitation rate estimate of 65% for Hugh Smith Lake was above the 2000-2003 average (50%; range 38-56%) but below the 1990s average (75%; range 68-81%). The 2004 region-wide summer troll coho fishery began July 1 and ended September 30, with only a 2-day closure during August 10-11.

Table 14. Coho salmon harvest in Southeast Alaska in 2004 by gear type (preliminary).

Gear Type	Harvest
Troll	1,916,600
Purse seine	405,200
Drift Gillnet	339,500
Set Gillnet	196,900
Sport	269,000
Total	3,127,200

Preliminary 2004 Chinook and Coho Salmon Catches in Washington and Oregon Fisheries

The 2004 season was conducted under the renewed Annex IV arrangements of the Pacific Salmon Treaty. This report covers the fisheries that occur between Cape Falcon and the U.S./Canadian border. These fisheries are subject to the chinook ISBM obligations contained within the 1999 Agreement and the Southern Coho Management Plan adopted in 2002.

Preseason Planning

Southern U.S. regional management coordination occurs within the preseason Pacific Fisheries Management Council process commonly referred to as "North of Falcon". Within this process, participants evaluate the biological and social/economic consequences of options for the outside (ocean) and inside (Puget Sound and in-river) fisheries. The end product is a total fishery package that achieves both domestic and Pacific Salmon Treaty obligations as assessed by our domestic fishery regulation assessment models.

Chinook Salmon Management

Under the 1999 Pacific Salmon Treaty Agreement, Council fisheries are subject to the Individual Stock Based Management provisions of Annex IV, Chapter 3. These provisions require the adult equivalent harvest rate by all U.S. fisheries south of the U.S./Canada border to be reduced by 40% from the 1979-1982 base period for chinook stocks failing to achieve escapements at or above established escapement goals. Fishing levels and patterns were also constrained to meet provisions of the U.S. Endangered Species Act for threatened and endangered Chinook salmon stocks originating from Puget Sound and the Columbia River.

Coho Salmon Management

All U.S. natural spawning coho management units defined by the Southern Coho Management Plan were forecasted to be in moderate or abundant status, so exploitation rate caps for U.S. fisheries on U.S. management units did not represent a constraint in planning southern U.S. mix-stock fisheries. As with the 2003 season, the low status of the Interior Fraser management unit (including Thompson River coho) established an exploitation rate cap of 10% applied to southern U.S. fisheries.

Descriptions of the various regional fisheries, their general management constraints, and preliminary estimates of landed catch are listed in the following subsections. Tables 1 and 2 contrast preseason projections of catches with the preliminary estimates of landed catch for chinook and coho in the various 2004 fisheries of interest to the Pacific Salmon Commission. For historical perspective, catches for those fisheries since 1995 are also presented. Complete fishery catch reports (e.g., Puget Sound recreational catch estimates) and preliminary estimates of spawning escapements are not available at this time. Note that all 2004 season catch estimates presented in the text and tables are preliminary.

North of Cape Falcon Ocean Fisheries

Management objectives for chinook fisheries in this area are to satisfy standards for ESA-listed stocks, and to the extent possible, provide for viable ocean and in-river fisheries while protecting depressed Columbia River natural stocks and meeting hatchery fall chinook brood stock needs. Lower Columbia River and Bonneville Pool hatchery fall chinook have historically been the major stocks contributing to ocean fishery catches in the North of Cape Falcon area.

Quotas specified by species for treaty Indian, Non-Treaty commercial and recreational, define harvest opportunity for chinook and coho salmon. Lower quotas for chinook salmon in 2004 were a result of requirements to protect ESA-listed Snake River wild fall chinook.

Treaty Troll Fishery

The treaty troll fishery was constrained by a chinook quota of 49,000 and a coho quota of 75,000. The season was comprised of a May/June chinook directed fishery and a July through September 15 all species fishery. The season concluded with a catch of 49,125 chinook and 61,702 coho.

Non-treaty Troll Fishery

Preseason non-treaty troll quota levels of 44,500 chinook and 67,500 coho (with healed adipose fin-clip) were adjusted through an inseason trade with the recreational fishery in which 5,000 chinook were transferred to the troll quota in exchange for 20,000 coho to the recreational quota. The preliminary estimates of non-tribal harvest in the 2004 North of Falcon troll fishery are 46,395 chinook and 8,388 coho. Some 28,869 chinook were harvested in the May 1-June 15 fishery and the remaining 17,526 harvested between July 8 and September 15. The coho catch represents harvest in a mark-selective fishery (healed adipose fin-clips) in the northern areas throughout the season; retention of unmarked coho was allowed during September in the southern part of the area. Total landings of coho were far lower than anticipated due to lower than expected marked fish availability and fishing effort directed at chinook salmon.

Recreational Fisheries

As described above, preseason quotas for the recreational fishery were adjusted through an inseason trade with the non-treaty troll fishery. The 20,000 coho received in the trade with the troll fishery was used to extend the season for the Neah Bay area which was experiencing higher than anticipated catch rates.

Columbia Ocean Area (including Oregon)

Ocean Area 1 (Columbia Ocean Area) opened for recreational all-species salmon fishing on Sunday, June 27 with a quota of 101,250 coho and a pre-season guideline of 8,000 chinook. The fishery closed on its automatic closure date, September 30. The catch estimates for Area 1 through September 30 are 6,562 chinook and 65,695 coho (65% of the quota). The chinook minimum size limit was reduced from 26 inches to 24 inches, and the number of days opened per week was expanded from four days to seven days due to lower than expected catch rates.

Westport

Ocean Area 2 (Westport) opened for all-species recreational salmon fishing on Sunday, June 27 with a quota of 74,900 coho and a pre-season guideline of 25,800 chinook. Poor catch success and low effort in this area resulted in relaxation of the restriction to four days per week, and the chinook minimum size limit was reduced to 24 inches from 26 inches. Retention of unmarked coho was permitted in this area beginning August 29 with a quota level of 10,000 fish to ensure that stock specific, pre-season planned impacts would not be exceeded. The non-selective coho fishery was closed after September 6. The catch estimates for Area 2 are 9,582 chinook and 18,704 coho.

La Push

Ocean Area 3 (La Push) opened for all-species recreational salmon fishing on Sunday, June 27 with a quota of 5,200 coho and a pre-season guideline of 1,900 chinook. The fishery closed on its automatic closure date, September 19, and reopened September 25 through October 10 in the area inside three miles of the shore around the mouth of the Quileute River. The catch estimates for Area 3 through October 5 are 1,430 chinook and 2,730 coho (53% of the quota). The chinook minimum size limit was reduced from 26 inches to 24 inches inseason due to lower than expected catch rates.

Neah Bay

Ocean Area 4 (Neah Bay) opened for all-species recreational salmon fishing on Sunday, June 27 with a quota of 21,050 coho and a pre-season guideline of 3,700 chinook. Due to higher than anticipated coho catch rates, the initial coho quota was increased by inseason management action to 30,750. Higher stock impacts of this increased quota were offset by reductions to the Westport area catch quota. The fishery closed on September 2 to ensure the adjusted quota would not be exceeded. The catch estimates for Area 4 through September 2 are 5,510 chinook and 28,496 coho.

Washington Coastal Fisheries

North Washington Coastal Rivers

Net and sport fisheries directed at salmon in this region were implemented based upon pre-season, tribal-state agreements and subject to in-season adjustment. The north coastal rivers net harvest (all by tribal fisheries) includes catch for the Waatch, Sooes, Quillayute, Hoh, Queets, Quinault, Moclips, and Copalis rivers. The 2004 commercial net fisheries in north coastal rivers have harvested an estimated 20,200 chinook and 52,700 coho through November. Recreational fishery harvest estimates are unavailable at this time.

Grays Harbor

Net and sport fisheries directed at salmon in Grays Harbor are implemented based upon pre-season, tribal-state agreements and subject to in-season adjustment. Harvest for Grays Harbor includes catch from both the Humptulips and Chehalis rivers. The 2004 tribal net fisheries have harvested an estimated 3,200 chinook salmon and 17,300 coho salmon. Non-Indian commercial fisheries have harvested 300 chinook salmon and 5,200 coho salmon. Recreational fishery harvest estimates are unavailable at this time.

Columbia River Fisheries

Treaty-Indian and non-Indian commercial and sport fisheries for chinook and coho in 2004 occurred during the winter/spring (February-May), summer (June-July) and fall (August-October) periods. All fisheries were constrained by impacts on ESA-listed stocks. Winter/spring fisheries were primarily constrained by impacts on ESA-listed upper Columbia River and Snake River spring/summer chinook. Summer fisheries were constrained by impacts to ESA-listed Snake River spring/summer chinook and Snake River sockeye. Fall fisheries were constrained by impacts to ESA-listed Snake River fall chinook.

Winter-Spring Fisheries

Non-Indian Commercial

The non-Indian winter (February-March 2004) commercial fishery was conducted as a selective fishery and occurred for a total of nine days, which resulted in a total of 13,500 adipose fin-clipped chinook harvested.

Recreational

The 2004 mainstem recreational fishery operated under selective fishery regulations. Over 164,000 angler trips resulted in 23,700 fin-clipped chinook being landed.

Treaty Indian

The treaty Indian fishery caught 17,400 spring chinook including commercial, ceremonial and subsistence catches.

Summer-Fall Fisheries

Non-Indian Commercial

A summer season fishery occurred in 2004 with 200 adipose fin-clipped chinook being harvested. Non-Indian fall fisheries were managed not to exceed a total impact rate (including ocean and Columbia River fisheries) of 49% on LRH (Coveeman) fall chinook. Early fall mainstem fisheries consisted of chinook salmon seasons that occurred during the month of August. Total chinook catch was 11,300 fish.

Late fall mainstem fisheries were initiated on September 19 and completed on October 29 and included general salmon seasons plus coho and chinook target seasons. Open areas included most or all of Zones 1-5 with certain closed areas adopted to protect ESA listed chinook, coho, and chum. Preliminary estimates of landings for the fall season of the non-Indian commercial fishery were 66,400 coho and 41,000 chinook.

Recreational

The Buoy 10 fishery (from the mouth upstream to the Tongue Point/Rocky Point line) opened August 1 for chinook, adipose fin-clipped coho, and adipose fin-clipped steelhead. For the season a total of 74,400 angler trips resulted in 17,400 chinook and 16,500 coho being retained.

The mainstem Columbia River (from the Tongue Point/Rocky Point line upstream to Hwy 395 Bridge at Pasco) opened for chinook and coho on August 1. Non-adipose fin-clipped coho were released downstream from Bonneville Dam. For this season a total of 20,200 chinook were landed. In the lower Columbia River 87,400 angler trips resulted in 17,700 of those chinook landed.

Treaty Indian

Treaty Indian summer season fisheries harvested 8,700 chinook including commercial, ceremonial and subsistence catches.

The Treaty Indian fall commercial fishery consisted of eight weekly 2-1/2, 3-1/2 or 4-1/2 day fishing periods from August 26 to October 16. Preliminary catch data indicate 125,900 fall chinook were harvested, including commercial, ceremonial and subsistence catches.

Puget Sound Fisheries

Puget Sound marine fisheries of interest to the Pacific Salmon Commission in 2004 were regulated to meet conservation and allocation objectives for chinook, coho, chum and sockeye salmon stocks, per tribal-state agreement. For Puget Sound chinook listed under the ESA, fisheries were managed according to the state and tribal joint resource management plan, the Puget Sound Comprehensive Chinook Harvest Management Plan. This management plan defines limits to total exploitation rates for natural stocks and was determined by the National Marine Fisheries Service to be consistent with requirements specified under the ESA 4(d) Rule.

Release requirements were applied to many recreational and commercial fisheries for chinook, coho and chum salmon, the latter to protect ESA-listed summer chum.

Strait of Juan de Fuca Recreational

Selective recreational fisheries, allowing retention of chinook or coho with healed ad-clips beginning July 1 in the Strait of Juan de Fuca (Areas 5 & 6). The chinook selective fishery was regulated by a catch quota of 3,500 landed chinook, or a maximum season length of 41 days. Additional sub-areas were also closed, as with the 2003 fishery. The chinook selective fishery was closed after August 8. Areas 5 and 6 were also open to chinook retention (non-selective) from February 14 through April 10 and from November 1 through November 30 with a 1 fish daily limit.

Recreational catch was estimated by creel survey in Area 5 from July 1 through September 30 and in Area 6 from July 1 through August 8. Catches totaled 3,944 chinook and 41,646 coho during that period. Catch record card estimates for salmon taken at times other than noted above are not yet available.

Strait of Juan de Fuca Net

Preliminary estimates of the 2004 catch in Strait of Juan de Fuca tribal net fisheries are 800 chinook and 7,300 coho salmon. These chinook and coho catches were less than the preseason expectations of 1,100 chinook and 14,200 coho.

Strait of Juan de Fuca Treaty Troll (Area 4B, 5, and 6C)

The preliminary estimates of the 2004 Strait of Juan de Fuca treaty troll fishery are 5,800 chinook and 900 coho through October. The tribal catch estimates from this area do not include catches from Area 4B during the May-September PFMC management period, which have been included in the North of Cape Falcon troll summary.

San Juan Islands Net (Area 7 and 7A)

Preliminary estimates of the 2004 catch in San Juan Island net fishery directed at sockeye or chum salmon totaled 5,200 chinook and 20,100 coho salmon. These chinook and coho catches were more than the preseason expectations of 3,800 chinook and 4,600 coho.

San Juan Islands Recreational

The southern and southeastern (Rosario Strait) portions of this catch area were again closed in 2004 to protect migrating, mature Puget Sound chinook salmon. The remaining area was opened for retention of chinook and coho salmon from July 1 to September 30. Release of unmarked coho salmon was required for the months of August and September. The month of October was opened for the entire area with release of chinook salmon required. Chinook retention also was allowed in the entire area from February 1 – March 31 and for the month of November; chinook retention was not allowed at other times. Recreational fishery harvest estimates are unavailable at this time. Additional subarea closures are described in the Sport Fishing Rules Pamphlet. Catch estimates for this area are not available at this time.

Inside Puget Sound (Areas 8-13) Recreational

Catch and angler effort estimates for these areas are not available at this time.

Puget Sound Marine Net

To achieve conservation objectives for Puget Sound chinook and coho, very limited commercial fishing opportunities directed at chinook and coho were planned for 2004. Tribal and non-tribal net fishery harvests in Puget Sound marine areas 8-13, not including in-river fisheries, totaled 37,800 chinook compared to the preseason expectation of 16,100. Coho catches totaled 223,000 compared to a preseason expectation of approximately 142,800. Additional tribal net harvest of coho and chinook occurred in river fisheries.

Table 15. Preliminary 2004 landed **CHINOOK** catches for Washington and Oregon fisheries of interest to the Pacific Salmon Commission (nearest 100). 1/ Note: Patterned cells denote years/areas where some type of mark-selective fishery occurred. Refer to footnote 1/ for details.

[illegible]

Table 15. Preliminary 2004 landed CHINOOK catches for Washington and Oregon fisheries of interest to the Pacific Salmon Commission.

Footnotes:

- 1/ Estimates represent landed catch only and do not include non-retention mortality. 2004 estimates include catches from January 1 through October.
- 2/ 2004 Nontreaty troll quota of 44,500; treaty quota of 49,000; This column shows recreational chinook guidelines by area; quota of 44,500 is for all areas combined.
- 3/ Includes Area 4B catch during the PFMC management period (May 1 - September 30); excludes treaty troll catch outside PFMC period.
- 4/ Excludes Area 4B catch outside Council management period (Oct 1 - Apr 30)
- 5/ 2004 & 2003 catches represent summer-only, since CRC annual estimates are not yet available.
- 6/ Includes both Buoy 10, mainstem and tributary sport catch.
- 7/ Includes catch from the upper Chehalis (River+2A+2D) and Humptulips (River+2C).
- 8/ Does not include catches from extreme terminal area or river fisheries.

Table 16. Preliminary 2004 landed **COHO** catches for Washington and Oregon fisheries of interest to the Pacific Salmon Commission. 1/
Note: Patterned cells denote years/areas where some type of mark-selective fishery occurred. Refer to footnotes 1/ and 2/ for details.

Fishery	2004	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995
	Preseason	Preliminary									
	2	Postseason									
Ocean Fisheries											
Troll Cape Flattery & Neah Bay (Area 4) 3	142,500	70,090	18,800	17,600	64,200	24,700	37,400	7,900	15,700	36,000	56,200
Quillayute (Area 3)											
Grays Harbor (Area 2)											
Col. R. (Leadbetter Pt. to Cape Falcon)			7700	1600	10800	14800	0	0	0	0	0
Sport											
Neah Bay (Area 4) 3	21,050	28,496									
LaPush (Area 3)	5,300	2,730	62,400	29,100	90,600	37,900	20,500	8,300	14,200	31,300	3,900
Grays Harbor (Area 2)	74,900	18,704									
Col. R. (Leadbetter Pt. to Cape Falcon)	101,250	65,695	106,400	59,400	116,700	39,600	27,100	6,500	16,900	24,800	36,400
Inside Fisheries											
Sport											
Juan de Fuca (Areas 5 & 6) 4	35,276	41,569	50,799								
San Juan Islands (7)	na	na	1,950	73,200	204,700	71,900	22,100	89,500	130,200	85,400	74,300
Puget Sound Sport (Areas 8-13 all year)	na	na	48,736								
North WA Coastal Rivers	na	na	1,901	2,951	5,584	1,883	1,721	1,781	162	1,906	1,364
Grays Harbor (Areas 2A-2D)	na	na	na	13,200	20,900	3,200	3,900	2,300	1,600	7,200	9,700
Columbia River Buoy 10	15,000	16,500	54,301	6,205	132,038	21,478	8,861	3,175	20,357	4,537	5,026
Commercial											
North WA Coastal Rivers	na	52,700	44,654	71,941	69,313	30,074	45,486	20,036	4,218	38,295	16,934
Grays Harbor (Areas 2A-2D) 5	48,000	22,500	18,300	21,100	18,800	16,700	14,600	14,500	5,600	64,700	50,000
Strait of Juan de Fuca (Areas 4B, 5 & 6C) Net and Troll	14,400	8,200	3,503								
San Juan Islands (Areas 6, 7 & 7A)	4,600	20,100	651	181,102	265,550	279,830	79,845	124,246	123,308	120,514	294,148
Puget Sound Marine (Areas 8 – 13) 6	142,800	223,000	88,509								

Table 16. Preliminary 2004 landed COHO catches for Washington and Oregon fisheries of interest to the Pacific Salmon Commission.

Footnotes:

- 1/ Estimates represent landed catch only and do not include non-retention mortality. 2004 estimates include catches from January 1 through October.
- 2/ 2004 Nontreaty troll quota of 67,500 marked coho; treaty troll quota of 75,000 coho; Recreational quotas as shown.
- 3/ Excludes Area 4B catch outside the PFMC management period (Oct 1 - Apr 30).
- 4/ 2004 & 2003 catches represent summer-only selective fisheries, since CRC annual estimates are not yet available. 2004 preseason estimate is for July-September period only and the preliminary postseason estimate is for Area 5 only.
- 5/ Includes catch from the upper Chehalis and Humptulips Rivers.

Preliminary Review of 2004 Washington Chum Fisheries of Interest to the Pacific Salmon Commission

November 24, 2004

This summary report provides a preliminary review of the 2004 chum fishing season and is subject to correction and revision as additional information becomes available. Some Washington chum fisheries are still underway and some fish ticket data may still not be in the catch reporting system. Catch and run size information provided are preliminary data reported through November 24. This report addresses in detail only those fisheries of concern under the Pacific Salmon Treaty. The mixed-stock fisheries in United States (U.S.) waters that are addressed in the Chum Annex of the Pacific Salmon Treaty are those in the western Strait of Juan de Fuca (areas 4B, 5 and 6C), the San Juan Islands (area 7) and the Point Roberts area (area 7A). Other chum fisheries in Washington waters are primarily terminal fisheries, which harvest runs of local origin.

Mixed Stock Fisheries

Areas 4B, 5, 6C

As in previous years, the chum fishery in areas 4B,5,6C was restricted to Treaty Indian gill net gear only. The fall chum fishery opened the week of October 10 and remained open 5 days per week for two weeks. After the first two weeks of the fishery it was determined that effort remained low and the fishery was expanded to seven days per week until the conclusion of the fishery in mid-November.

Incidental catches of chum salmon occurred in fisheries for other species prior to the fall chum management period. A total of 216 chum were taken prior to September 16 (during the summer chum management period). An additional 85 chum were harvested incidental to coho fisheries prior to the fall chum management period. 4,592 chum were harvested in chum fisheries after October 10, bringing the total chum catch to 4,893 (Table 17).

No tissue samples for genetic analysis were collected from the 2004 fishery.

Areas 7 and 7A

Preseason forecasts were for a good return of fall chum in Puget Sound. In-season updates of abundance indicate many runs are much larger than the preseason forecast. This year a new PSC agreement is in place that modifies some provisions of the existing Chum Annex of the PST. This agreement calls for a flat exploitation rate limit on chum fisheries in Johnstone Strait, and specifies a fixed harvest level in U.S. Areas 7 and 7A, unless a critical abundance level is detected in the runs returning through Johnstone Strait. The Areas 7 and 7A harvest level, as specified in the agreement, is 130,000 chum plus an adjustment of 46,000 chum from previous underages, for a total target catch of 176,000 chum. Canada did not make a preseason forecast nor provide in-season updates of chum abundance, but did indicate inseason that the run size was not at a critical level. The new agreement also stipulates that chum fisheries in Areas 7 and 7A will not begin prior to October 10, and that if the Fraser River chum run is updated inseason to be less than 900,000 fish the U.S. will take actions to restrict fishery impacts on Fraser chum.

The inseason Fraser chum run size estimate was 1.3 million, so this provision was not triggered in 2004.

Non-Treaty reef net fisheries targeting coho salmon were conducted following the end of Fraser Panel control, and continued open through the chum management period until mid-November.

A Treaty Indian gillnet and purse seine fishery opened at the start of the fall chum management period with a three day fishery on October 10 - 12. The Non-Treaty fishery followed with two days of gillnet and purse seine fishing on October 13 and 14.

For the week beginning October 17, the Treaty Indian fishery went for three days from October 17 through October 19. The Non-Treaty fishery was expanded to three days from October 20 through October 22.

The Treaty Indian fishery reopened on October 23 and was open continuously into early November except for a brief closure on October 28 and 29. The Non-Treaty fishery reopened on October 25 and remained open 5 days a week for the next two weeks.

Catches were very good the first week of the chum fishery, but there was a considerable drop off in catches early in the second week of fishing. Catches picked back up again at the end of the second week and first part of the third week, but by the first week of November there was little or no catch or effort. Chum prices were improved over the past several years, and coupled with good abundance in October, resulted in the fishery nearly meeting the quota for 2004.

There were 20 summer chum reported caught in areas 7 and 7A prior to September 16. These were taken incidental to sockeye fisheries. The total chum catch by all gears in areas 7 and 7A is reported, through late November, at 160,353 fish (Table 17).

Puget Sound Terminal Area Fisheries and Run Strength

Preseason forecasts for chum returns to Puget Sound were for a good fall chum run totaling about 1.5 million fish. Most Puget Sound chum runs have been updated in-season indicating overall returns significantly larger than expected preseason. Current in-season estimates are for a very large Puget Sound chum run of approximately 2.4 million. Some Puget Sound chum fisheries are still underway, and additional in-season estimates of abundance may be made. At this time, spawning escapement estimates are not available.

Table 17. Preliminary 2004 chum harvest in selected Puget Sound catch reporting areas.

Week(s)	Areas 4B,5,6C Treaty Indian	Areas 7 & 7A Treaty Indian	Areas 7 & 7A Non-Indian	Areas 7 & 7A Total
Prior to 9/16	216	20	0	20
9/16 - 10/9	85	0	913	913
10/10 - 10/16	26	43,955	36,457	80,412
10/17 - 10/23	1,593	14,375	25,450	39,825
10/24 - 10/30	547	27,950	9,005	36,955
10/31 - 11/13	2,426	1,716	512	2,228
Season Totals	4,893	88,016	72,337	160,353

Season Review and Highlights, 2004

U.S. Fraser River Sockeye Fisheries

Introduction: The 2004 Fraser River Panel season was the sixth implemented under the renewed Annex IV of the Pacific Salmon Treaty (PST). The treaty establishes a bilateral (U.S. and Canada) Fraser River Panel (Panel) that develops a pre-season management plan and approves in-season fisheries within Panel Area waters directed at sockeye and pink salmon bound for the Fraser River (Figure 1). In partial fulfillment of Article IV, paragraph 1 of the PST, this document provides a season review of the 2004 U.S. Fraser River salmon fisheries as authorized by the Panel. Catch and escapement information for 2004 presented is considered preliminary and based on a Pacific Salmon Commission (PSC) Final In-Season Tables as of October 12, 2004.

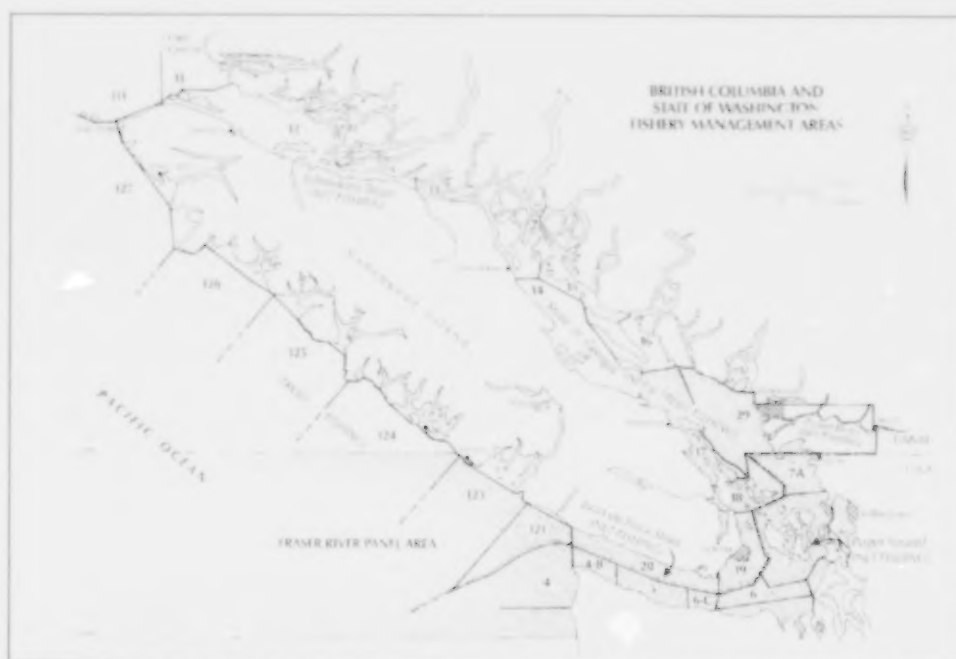


Figure 1. British Columbia and State of Washington Fishery Management Areas, 2004. The shaded area in the map represents the marine waters managed by the Fraser River Panel.

Pre-season Management

Forecasts

The Department of Fisheries and Ocean, Canada (DFO) provided the Panel pre-season run size forecasts by stock group (run) at various probability levels. Table 1 shows the 2004 pre-season forecasts at the 50 percent probability level, which represents the mid-point of the range of possible run sizes.

Table 18. 2004 pre-season Fraser River sockeye forecasts at the 50 percent probability levels, by stock group.

Early Stuart	Early Summer	Summer	Late	Total
216,000	885,000	3,501,000	318,000	4,920,000

For management purposes the Late-run stock group forecast was separated into Birkenhead type and "True Late" stock components (Table 19).

Table 19. 2004 pre-season True Late-run sockeye component forecasts at the 50 percent probability levels.

Birkenhead type	"True Late"	Total
218,000	100,000	318,000

Diversion

Northern diversion is defined as the percentage of Fraser sockeye migrating through Johnstone Strait (rather than the Strait of Juan de Fuca) in their approach to the Fraser River.

Diversion through Johnstone Strait was forecasted in June at 77% and upgraded in July to 78% based on average May sea surface temperatures at Kains Island (Michael Folkes).

Northern diversion was expected to increase over the course of the summer. Diversion was modeled on a daily basis starting at 0% (100% migration through the Strait of Juan de Fuca) on June 26 and climbing to 85% in steady increments by July 21.

Environmental Management Adjustment (EMA) and Environmental Conditions

Environmental Management Adjustments reflect the expected difference between escapement estimates at Mission (minus catch above Mission) and actual spawning escapements. If the adjustments are adopted by the Panel, they are added to the gross escapement goal, effectively increasing the goal for an impacted stock. "For the Early Stuart and Early Summer-runs, which historically have been exposed to both high discharge and high temperature events that caused en route losses, the models included discharge and temperature predictor variables. The Summer-run model was based only on a temperature variable, while the model for True Late-run stocks (excluding Birkenhead) was based on the date that 50% of the migration passed Mission. Generally, en route mortalities of Early Stuart, Early Summer and Summer-run sockeye are expected to be significant when river temperatures exceed 18°C or discharge levels exceed 8000 cms, and the effect increases with the duration above these thresholds. In-season environmental adjustments consider EMA models that are based on measured and forecasted temperatures and discharges from DFO's Fraser Environmental Watch Program"⁴ and other available information.

Low snowpack levels in the Fraser River watershed were expected to cause low flows and higher than normal water temperatures.

⁴ EMA 2004 Summary 11-Oct-04

Table 20. 2004 Pre-Season Environmental Management Adjustments

Early Stuart		Early Summer		Summer	
Date	EMA	Date	EMA	Date	EMA
May 27	38,000	May 20	133,000	May 27	0
July 8	10,000	July 8	147,000	July 8	0

Run Timing

Run timing is temporal information about the presence of a salmon stock in an area during the time the stock migrates to the spawning grounds. Run timing is an important variable when predicting run size based on early abundance estimates.

The following Area 20 50% dates (the dates when 50% of the stock or run group were forecasted to have passed through Area 20) were predicted for the major Fraser sockeye run groups.

Table 21. 2004 Area 20 Pre-Season 50% Run Timing Dates

Run Group	Area 20 50% Run Timing Date
Early Stuart	July 3
Early Summers	July 21
Summers	August 6
Birkenhead	August 12
True Lates	August 14

U.S. Total Allowable Catch (TAC)

Pre-season, the U.S. TAC was established at 367,000 sockeye.

Management Plans

During the preseason planning process the Fraser Panel evaluates and adopts management approaches for Fraser sockeye that address conservation, and harvest objectives for each major sockeye stock group. The Fraser River Panel develops fishing plans and in-season decision rules with the objective to meet management goals. Managing Fraser River sockeye involves a trade-off between catching abundant stocks and meeting escapement objectives for less abundant stock groups.

True Late Run

General Management

In 2004 the Panel adopted a management approach that presumed, similar to recent years, that True Late-run sockeye would enter the Fraser River early and a significant proportion would not survive to spawn.

Achieving True Late-run sockeye objectives was identified as the overriding priority in the "2004 Fraser River Management Plan Principles and Constraints" document. Fishing models predicted that, due to the overlap in run timing between True Late-run and Summer-run sockeye, access to Summer-run sockeye would be restricted in order to meet Late-run management objectives. PSC staff and the Fraser Technical Committee incorporated a formal risk assessment approach into the True Late-run management analysis in order to quantify key sources of uncertainty and to rank alternative management actions.

True Late-run stock proportions were expected to be below 5% prior to their peak abundance. PSC staff did not anticipate being able to provide True Late-run forecasts of timing and abundance for important fisheries management action. For the purpose of monitoring True Late-run impacts, it was decided to use the pre-season planning model, modified by any in-season adjustments to run size, timing and diversion rate available at the time of a decision. Two approaches were suggested for indirectly monitoring True Late-run impacts: A fishing effort, and a catch approach.

Under the fishing effort approach the fishing effort would be held constant within the True Late-run fishing window, regardless of actual catches, based on an underlying assumption that the relationship between fishing effort and harvest rate is known, and that fishing effort can therefore be used as a surrogate for harvest rate.

Under the catch approach fixed catch targets would be used within the True Late-run fishing window, regardless of how much effort would be expended to achieve that catch. Here the assumption is that run size and timing are well understood and that a deviation of catches from expectations is due to a change in harvest rate.

Foregone effort or catch in one week would not be equally transferred to another week, because of changes in True Late-run stock composition and thus increased True Late-run impacts over time.

The United States chose a fixed catch approach during the Summer/Late-run fishing window.

Pre-Spawn Mortality

True Late-run sockeye en-route mortality is associated with early upstream migration.

A 50% upstream migration of August 26 was adopted based on recent True Late-run behavior observed in 2000 and 2001 cycle lines, which equated to an associated en route mortality of 80%, based upon the Environmental Management Adjustment model.

Conservation Objectives

The Panel adopted a 15% fishery impact limitation on True Late-run sockeye. Additionally, Canada intended to adopt more restrictive measures in its fisheries in order to protect Cultus Lake sockeye, limiting overall impacts downstream and seaward of the confluence of the Vedder and Fraser River to 12% of the total return.

Total Allowable Catch (TAC) Computation

"For the purpose of computing TAC shares by stock management groupings in 2004, the panel agreed to a Fraser River Aboriginal Exemption for Early-Stuart sockeye of 80,000, and to apportion the remaining balance (320,000) based on the harvestable surpluses (Total return less net escapement and projected test catch) for Early Summer, Summer and True Late-run stocks."² This calculation resulted in a FRA for True Lates of 1,645. The FRA for Early Summers, Summers, and Birkenhead was apportioned from the remaining 318,355 based on the three year cycle average of First Nations catches for those stock groups.

The United States share was computed as 2.1% of the total True Late-run return.

Early Stuart Management Approach

Due to a small international TAC of 30,800 sockeye, commercial fisheries were not contemplated on this run timing group. Target harvest would be allocated to Canadian in-river first nation fisheries. It was expected that the fisheries would be managed as in past seasons, with regular run-size assessments starting in late June.

Early Summer-run Management Approach

An international TAC of 306,200 sockeye was identified. All the usual assessment information was expected to be available in time for in-season management decisions. Fisheries would be initiated when in-season conditions approached pre-season modeled parameters.

Summer-run Management Approach

The Summer-run was expected to contribute over 70% of the Fraser sockeye run and to provide most of the harvest in 2004.

The TAC for international sharing was estimated at 1,794,100 sockeye.

During pre-season planning and modeling, U.S. access to Summer-runs was restricted, because of a forecasted low abundance in the Strait of Juan de Fuca (high diversion) and True Late-run fishing constraints. The U.S. planned on a short, but intense fishery during

the peak of the Summer-run, when True Late-run stock composition was still expected to be low. In order to successfully implement this strategy, timely and accurate catch accounting was considered to be crucial. In response to high diversion and low expected catch rates the U.S. planned on scheduling in-common treaty and non-treaty fisheries with the goal of maximizing fishing effort and catch.

In-Season Management

In-season, the Pacific Salmon Commission staff analyzes a wealth of information to produce best estimates of diversion, environmental management adjustments, run-timing, abundance, and harvest by stock group. These estimates are created using stock ID information, test fishing data, counts of escapements past Mission, harvest data and environmental information.

In-Season Run Assessment, 2004:

The 2004 in-season estimated return of 4,518,000 sockeye salmon was 92% of the pre-season forecast. Early Stuart runs returned at 200,000 close to their pre-season forecast of 216,000, while Early Summer abundance was at 1,500,000 almost double the forecast. Summer-run stock groups returned at only 71% of forecast (Table 22). The pre-season forecast of True Late-run sockeye was used for in-season management purposes, because there was insufficient in-season information to update the run size.

Table 22. Comparison of pre-season vs. in-season abundance estimates for Fraser River Sockeye Salmon by Stock Group (run).

Stock Group	Pre-Season 50% Probability Forecast	In-Season Run Size Estimate	Comparison: In-Season vs.
			1. Pre-Season Forecast
Early Stuart	216,000	200,000	93%
Early Summer	885,000	1,500,000	169%
Summer	3,501,000	2,500,000	71%
Late	318,000	318,000	
Total	4,920,000	4,518,000	92%

Table 23. 2004 In-Season Run Sizes by Date

Date	E. Stuart	E. Summer	Summer	Late
May 19	216,000	885,000	3,501,000	318,000
July 8	137,000	885,000	3,501,000	318,000
July 9	137,000	885,000	3,501,000	318,000
July 13	137,000	885,000	3,501,000	318,000
July 16	190,000	885,000	3,501,000	318,000
July 20	200,000	885,000	3,501,000	318,000
July 27	200,000	1,100,000	3,501,000	318,000
July 30	200,000	1,200,000	3,501,000	318,000
Aug 3	200,000	1,300,000	3,501,000	318,000
Aug 6	200,000	1,500,000	4,000,000	318,000
Aug 12	200,000	1,500,000	4,000,000	318,000
Aug 13	200,000	1,500,000	3,500,000	318,000
Aug 16	200,000	1,500,000	3,200,000	318,000
Aug 20	200,000	1,500,000	3,200,000	318,000
Aug 27	200,000	1,500,000	2,500,000	318,000

Diversion

The migration of Fraser sockeye through Johnston Strait averaged around 90% during the first two weeks of August. This was higher than the forecasted diversion of 85% for the same time period.

Table 24 displays weekly diversion rates observed during the season.

Table 24. In-season Estimates of Diversion through Johnstone Strait³

Week Ending	Diversion Rate
July 17	30%
July 24	50%
July 31	70%
August 7	90%
August 14	90%

EMA and Environmental Conditions

The 2004 season distinguished itself as the year with the highest Fraser River temperatures on record. In mid-August temperatures reached 21.5°C, exceeding the 1998 temperature record of 21.2°C. For about six weeks temperatures soared above 18 °C, a critical threshold in the EMA models. Prolonged exposure to high temperatures induces stress in salmon and increases the occurrence of infectious diseases, ultimately leading to increased en route mortality. Early Stuart, Early Summer, and Summer-runs were exposed to these extreme temperatures. In-season EMAs increased for all three runs over the course of the season.⁴

Table 25. Summary of EMAs in 2004

Date	Early Stuart	Early Summer	Summer
May 19-20	38,000	133,000	0
July 8	10,000	147,000	0
July 9	19,000		
July 13	29,000		
July 27		182,000	
July 30		263,000	
August 3		286,000	
August 6		330,000	
August 16			570,000
Final In-Season	29,000	330,000	570,000

Run Timing

The 50% arrival timing of Early Stuart in Area 20 occurred two days later than predicted pre-season. Early Summer Area 20 peak migration occurred one week later than expected, whereas the peak of the Summer-run was 6 days earlier than forecasted.

³ Pacific Salmon Commission News Releases

⁴ The decreased EMA for Early Stuart from 38,000 to 10,000 was caused by corrections to the model not by changes in environmental conditions.

Table 26. 2004 Area 20 Post-Season 50% Run Timing Dates⁵

Run Group	Area 20 50% Run Timing Date
Early Stuart	July 5
Early Summers	July 28
Summers	August 1

Season Description

Week ending July 24:

Low impact U.S. treaty fisheries commenced in Areas 4B/5/6C on July 18 in accordance with the pre-season fishing plan. The Early Stuart run was updated to 190,000 sockeye with a run timing of three days later than forecasted. Preliminary Early Summer-run assessments suggested that either their abundance was tracking above the forecast or the run was tracking early.

Week ending July 31:

On July 26 treaty fisheries opened in Areas 6/7/7A. Two days later the first non-treaty fishery in Areas 7/7A was conducted. It was determined that the marine migration of Early Stuart sockeye was virtually complete. Early Stuart run size was updated to 200,000. Early Summer abundance was tracking above the 50% forecast level. Diversion through Johnstone Strait was estimated at 50%. In-river migration conditions deteriorated because of low discharge levels and high water temperatures.

Week ending August 7:

The U.S. continued treaty and non-treaty fisheries as planned. Early Summers and Summers were the predominant run groups in marine approach areas. Early Summer-run size was updated to 1,200,000. While the composite run size of the different Summer-run stocks appeared to be close to the pre-season forecast under normal timing assumptions, Summer-run stocks bound for the Chilko and Stellako River appeared to be either weaker or later than forecasted. Northern diversion was estimated at 70% early in the week and quickly rose to 90% by the end of the week.

In-river water temperatures and flows were still of great concern.

On Friday, August 6 the Early Summer-run size was upgraded to 1,500,000 and the Summer-run size was upgraded to 4,000,000. U.S. catches through August 7 were estimated at 91,000 sockeye with projected True Late-run impacts of 383 fish. These impacts were much lower than anticipated pre-season. Given the high Northern diversion rate and only one more week of fishing remaining, the U.S. did not anticipate taking its full share of 2,100 True Late-run impacts. The U.S. and Canada discussed a possible

⁵ Dates will likely change with the reworking of the Mission estimates in December

trade of True Late-run impacts to Canada in exchange for increased U.S. harvest opportunity in future years.

Week ending August 14:

This was the last week major fisheries were planned in the U.S. As in prior weeks non-treaty fishers fished concurrent with treaty fishers in order to maximize effort. Non-treaty fisheries were open 4 days in week 33. The treaty fishery was open continuously. U.S. catches and True Late-run impacts were significantly higher than anticipated. The True Late-run trade with Canada was not implemented.

The Northern diversion rate was estimated at 90%. On Friday, August 13, the Summer-run was downgraded to 3,500,000. True Late-run abundance appeared to be tracking higher than forecasted. The U.S. non-treaty and treaty commercial fisheries ended on August 13 and 14, respectively with an expectation of being consistent with True Late-run impact allowances and overall TAC. With fisheries planned on August 13, the U.S. expected to have a total catch of approximately 167,000 sockeye.

The Fraser Panel became increasingly concerned over the severe in-river temperatures and low water flows. Reports surfaced of sick sockeye in poor physical condition in the Fraser River.

Harvest

Between July 18 and August 15 the United States caught a total of 197,000 sockeye. During this time period Areas 4B/5/6C were open daily. The treaty fishery in Areas 6/7/7A was open for 19 days (including partial day openings) and the non-treaty fishery in Areas 7/7A was open for 11 days (12 days for reef nets). Given the high diversion in 2004, the U.S. attempted to balance its goal of maximizing total U.S. sockeye catch and meeting domestic harvest sharing objectives. As a result, treaty fishers fished in common with non-treaty gill nets and purse seines during all non-treaty openings, with the exception of July 28, when the fishing time of the two fleets overlapped by only three hours. Separate treaty fishing days were also scheduled (see table 27).

Table 27. 2004 U.S. Hours Fished and Catches^a

Date	Non-Treaty 7/7A Net			Treaty		Cumulative Catch	Daily Catch	Weekly Catch
	GN Hours	PS Hours	RN Hours	4B,5,6C Hours	6,7,7A Hours			
18-Jul				12		0	0	6366
19-Jul				24		1054	1054	
20-Jul				24		1806	752	
21-Jul				24		3098	1292	
22-Jul				24		4515	1417	
23-Jul				24		5898	1383	
24-Jul				24		6366	468	
25-Jul				24		7271	905	57624
26-Jul				24	12	15614	8343	
27-Jul				24	24	22115	6501	
28-Jul	16	16	16	24	8	31781	9666	
29-Jul	16	16	16	24	20	45716	13935	
30-Jul	16	16	16	24	24	60015	14299	
31-Jul				24	8	63990	3975	
1-Aug			16	24		69999	6009	52743
2-Aug				24	20	78722	8723	
3-Aug	16	16	16	24	24	91993	13271	
4-Aug	16	16	16	24	24	97352	5359	
5-Aug	16	16	16	24	24	105252	7900	
6-Aug	16	16	16	24	24	112289	7037	
7-Aug				24	24	116733	4444	
8-Aug				24	24	122198	5465	78670
9-Aug				24	24	125610	3412	
10-Aug	16	16	16	24	24	135705	10095	
11-Aug	16	16	16	24	24	147536	11831	
12-Aug	16	16	16	24	24	165753	18217	
13-Aug	16	16	16	24	24	186411	20658	
14-Aug				24	24	195403	8992	
15-Aug				C&S		197029	1626	1626

Table 28 displays Canadian and U.S. commercial and non-commercial sockeye catches by Area.

Table 28. Preliminary 2004 Canadian and U.S. Catch Estimates of Fraser River Sockeye Salmon.

		Fraser Sockeye Catches	
Area	Gear		
Commercial Catch			
<u>Canada</u>			
A & C Areas 1-10	Net		0
F Areas 1-10	Troll		0
G Areas 123-127, 11-12	Troll		0
B Areas 11-16	PS		500,000
D Areas 11-16	GN		155,600
H Areas 12-16	Troll		133,000
H Areas 18-29	Troll		0
B Area 20	PS		10,700
E Area 29	GN		246,200
Canadian Selective			13,100
FRA Economic Opportunity			267,800
Canadian Total			1,326,400
<u>United States</u>			
Alaska	Net&Troll		0
<u>Washington</u>			
T.I. Areas 4B/5/6C	Net		15,400 ^a
T.I. Areas 6/7/7A	Net		100,500 ^a
N.I. Areas 7/7A*	Net		81,100 ^a
Washington Total			197,000 ^a
U.S. Total			197,000 ^a
Non-commercial Catch			
PSC Test			24,300
Other Test			49,400
Fraser River Aboriginal (FSC)			359,000
Areas 12-124 Aboriginal			256,200
Recreational			52,200
Charter			0
U.S. TI Ceremonial			100
Non-comm. Total			741,200
Catch and Escapement			
Catch Accounted-to-date			2,259,700
Potential Net Escapement (Mission esc. less Aboriginal & sport catch above Mission)			2,178,600
Total Accounted-to-date			4,438,300

¹ Row and columns may not add-up due to rounding errors.

^a From "Final In-season Tables 10/12/2004.

^a From WDFW Soft Data 11/3/04

While the U.S. catch exceeded its expected total through August 14, the downgrade of Summer-run size and Summer EMA after closure of the U.S. fisheries created a drastic reduction in TAC that the U.S. was not able to incorporate into its fishery planning. As a result, the True Late-run catch objective was exceeded by almost 1000 fish. A detailed analysis of in-season catch accounting, run size updates, and EMA adjustments ultimately will be needed to fairly assess management performance.

2004 Escapement Estimates:

The preliminary 2004 gross escapement estimate of Fraser River sockeye salmon by run ranged from 56-107 percent of targets (Table 29). Gross escapement is defined as the number of fish estimated to have entered the mouth of the Fraser River. Gross escapement is determined in-season by combining the passage estimate at Mission with the First Nation (FN) catch below Mission. Actual estimates of sockeye spawning escapements (compared to gross escapements) by stock will be affected by en route and pre-spawning mortality, harvest levels above Mission, and accuracy/precision of various abundance estimates and racial analyses.

Table 29. Preliminary 2004 Gross Escapement of Fraser River Sockeye Salmon by Run.

Run	In-Season	Escapement		Gross	Percent Of Target
	Adjusted Gross	Above	FN Below	Total	
	Escapement Target	Mission	Mission	Escapement	
<i>Early Stuart</i>	197,500	187,000	4,000	191,000	97%
Early Summer	1,080,700	974,000	71,000	1,045,000	97%
Summer	2,498,500	1,287,000	116,000	1,403,000	56%
Late	201,500	207,000	9,000	216,000	107%
Total	3,978,200	2,655,000	200,000	2,855,000	72%

Preliminary spawning escapement estimates are currently only available for Early Stuart and Early Summer-runs.

Escapement for Early Stuarts was estimated at 9,244 sockeye. This is the lowest escapement on the cycle year in more than 3 decades and only about 10% of the escapement goal of 90,000 fish.

The estimate of the Early Summer-run sockeye escapement totals 156,953. "It is 30% of the in-season escapement target (525,000) and fell short of the PSC in-season estimate of

potential escapement of 839,683 by 81% (the PSC estimate has been adjusted for in-river harvest estimates above Mission)."¹⁶

Preliminary escapement estimates are showing significantly less sockeye arriving at the spawning grounds than were estimated at Mission. A post-season review will be conducted to investigate the causes of the widely differing escapement estimates.

¹⁶ 2004 Early Summer Run Sockeye Preliminary Escapement Estimates

**D. 2004 UPDATE REPORTS FOR SALMONID ENHANCEMENT PROGRAMS
IN THE UNITED STATES AND CANADA**

The Pacific Salmon Treaty between Canada and the United States requires that information be exchanged annually regarding operation of and plans for existing enhancement projects, plans for new projects, and views concerning the other country's enhancement projects. In 1988, a committee was formed to develop recommendations for the pre- and post-season and enhancement report formats. In summary, the committee proposed that:

- detailed reports on existing enhancement facilities of the type produced in 1987 be prepared every four years;
- the Parties will annually update information on eggs taken, fry or smolt released and adults back to the facility; significant changes in facility mission or production will be highlighted in narratives; and
- the Parties will provide periodic reports through the appropriate panels on new enhancement plans.

**1. 2003 ANNUAL REPORT ON THE SALMON ENHANCEMENT ACTIVITIES
OF THE UNITED STATES**

This report had not been received by March 31, 2005.

**2. 2004 ANNUAL REPORT ON THE SALMONID ENHANCEMENT
ACTIVITIES OF THE UNITED STATES**

This report had not been received by March 31, 2005.

**3. 2004 REPORT ON THE SALMONID ENHANCEMENT PROGRAM IN
BRITISH COLUMBIA**

This report had not been received by March 31, 2005.

Reports of the Joint Technical Committees

PART V

REPORTS OF THE JOINT TECHNICAL COMMITTEES

Executive summaries of reports submitted to the Commission by the joint technical committees during the period April 1, 2004 to March 31, 2005 are presented in this section. Copies of the complete reports are available from the library of the Pacific Salmon Commission.

A. JOINT CHINOOK TECHNICAL COMMITTEE

ESTIMATION AND APPLICATION OF INCIDENTAL FISHING MORTALITY IN CHINOOK SALMON MANAGEMENT UNDER THE 1999 AGREEMENT TO THE PACIFIC SALMON TREATY.

TCCHINOOK (04)-1 – April 8, 2004

In Annex IV, Chapter 3, Paragraph 3 of the 1999 Agreement (Agreement) to the Pacific Salmon Treaty, the Parties agreed to adopt a management framework for Chinook salmon based on total fishing mortality. The Parties recognized that significant uncertainty exists in predicting and estimating incidental mortality, and gave specific direction to the Chinook Technical Committee (CTC) to improve the technical basis for estimating incidental mortality as a prerequisite for full implementation of total mortality management. In the Appendix to Annex IV, Chapter 3, (1), the Agreement states:

“Improved estimates of incidental fishing mortality are to be developed based upon direct fishery observations. The CTC will collate and document existing information on the coastwide encounter rates for all sources of incidental mortality on Chinook coastwide. The CTC will report on the extent of incidental mortality and on deficiencies in the information coverage, and will recommend a work plan to address data deficiencies, including observer programs or other direct sampling procedures, that will enable implementation of a total fishing mortality regime for fisheries in 2002. The Parties will implement the work plan in a timely and comprehensive manner to ensure adoption of a total fishing mortality regime in 2002.”

This report is an initial overview of the estimation and application of incidental mortality in Chinook salmon management in fisheries in the geographic areas covered in the Pacific Salmon Treaty. The information provides insight into the degree to which total mortality management is imbedded in the current management framework, how existing information is collected and used, and the status of coastwide programs to estimate encounter rates and associated mortality. This information is used to identify deficiencies in both data collection and analytical application, and to develop a work plan to address these deficiencies.

CATCH AND ESCAPEMENT OF CHINOOK SALMON UNDER PACIFIC SALMON COMMISSION JURISDICTION, 2003

TCCHINOOK (04)-2 – June 22, 2004

The June 30, 1999, Pacific Salmon Treaty (PST) Annexes and Related Agreements (Agreement) substantially changed the objectives and structure of the Pacific Salmon Commission's (PSC) Chinook salmon fisheries and assessment of Chinook salmon stocks. The Agreement eliminated the previous ceiling and pass-through fisheries and

replaced them with Aggregate Abundance Based Management (AABM) and Individual Stock Based Management (ISBM) fisheries. It also tasked the Chinook Technical Committee (CTC) with a number of assignments (Appendix to Annex IV, Chapter 3).

In this report, we provide a summary of 2003 fishery catches by region and an assessment of escapement for those stocks that have CTC accepted goals. In addition, escapement data and agency comments have been provided for all escapement indicator stocks. We will also provide a second annual report that summarizes the exploitation rate analysis and the results of the CTC model calibration as was done last year (see CTC 2003a). Model calibration results will include postseason statistics for the 2003 fisheries and preseason predictions for the 2004 fisheries.

CHINOOK CATCH 2003

Only catches and some fishery effort estimates are presented in this report. Assessment of the AABM and ISBM fishery performance requires more detailed analyses using coded-wire tag (CWT) data and calibration of the CTC model. As was done in 2003, these analyses will be reported in the annual Exploitation Rate and Model Calibration Report (e.g., CTC 2003a).

This year's report differs from the previous three reports in several ways. First, in keeping with the move towards a total mortality regime, both landed catch and estimates of incidental mortality are provided in this report for each component of each AABM fishery for 2002 and 2003. Commentary on these fisheries is also provided, as in previous reports. Second, the CTC is currently discussing how to restructure the ISBM section to make it more informative and relevant to the Agreement. This would include reporting estimates of incidental mortality for these fisheries in a similar manner as done for the AABM fisheries in this report. However, the new format has yet to be finalized, and therefore, due to time constraints, the CTC was unable to complete restructuring of the ISBM section for this report. Consequently, no commentary on ISBM fisheries is provided in this year's report. However, landed catch is reported in the appendices as done in previous reports. Landed catch and incidental mortality estimates for ISBM fisheries will be included in next years report.

ESCAPEMENTS THROUGH 2003

The escapement review includes 50 naturally spawning escapement indicator stocks/stock aggregates. Biologically-based escapement goals have been accepted by the CTC for 22 of the 50 escapement indicator stocks/stock aggregates. For 11 of these stocks, the agency escapement goal is defined as a range; for the remaining 11 stocks, the escapement goal is the point estimate of S_{MSY} (escapement producing maximum sustained yield). In 2003, escapements were within the goal range for five stocks, above the range or S_{MSY} point estimate for 14 stocks, and below the goal range for three stocks. It was not possible to provide this assessment for the other stocks without accepted escapement goals. However, data for other stocks are presented to illustrate trends in escapement. Some stocks are managed to an agency goal, but these goals have not been accepted by the CTC. The CTC will continue to review analyses to develop CTC accepted goals for the remaining stocks as they are provided.

STANDARDIZED FISHING REGIMES FOR SOUTHEAST ALASKA CHINOOK FISHERIES

TCCHINOOK (04)-3 – September 20, 2004

The June 30, 1999 Agreement (Agreement) called for all Chinook salmon fisheries under the jurisdiction of the Pacific Salmon Commission (PSC) to adopt total mortality based management regimes. However, the parties agreed that there was much uncertainty regarding the magnitude of and ability to estimate the number of incidental mortalities. Therefore, in Annex IV, Chapter 3, Paragraph 3, the parties called for the establishment of standardized fishing regimes. Specifically, the Agreement called for:

"beginning in 2000, total adult equivalent fishing mortality in each Aggregate Abundance Based Management (AABM) fishery shall be constrained by expressing the fishery management objective as a target catch index and a standardized management regime (e.g., minimum size limit of x, ratio of chinook retention to chinook non-retention periods not to exceed y)."

The intent was to establish standardizations that would ensure that a fishery would not increase its incidental mortalities compared to previous fishery regimes. This document provides the standardized fishing regime for the Southeast Alaska (SEAK) all-gear quota at three levels of abundance indices (AIs), with specifics for each gear group included at each AI. These three scenarios represent how Alaska would have managed the SEAK fisheries, given fishing regulations in place at the time of the signing of the 1999 Agreement. Some regulation changes have occurred since the 1999 Agreement for SEAK fisheries that are not included in this document. Later in the document, present and past fishing regulations in SEAK that effect the number of incidental mortalities are presented, along with information concerning available data bases for estimates of incidental mortality from 1985-2002.

ANNUAL EXPLOITATION RATE ANALYSIS AND MODEL CALIBRATION

TCCHINOOK (04)-4 – December 31, 2004

This report contains the results of the Chinook Technical Committee (CTC) annual exploitation rate assessment and the final pre-season Chinook model calibration for 2004 (CLB 0404). Results include the Abundance Indices (AIs) for the Aggregate Abundance Based Management (AABM) fisheries and Individual Stock Based Management (ISBM) Indices for each party and a summary of pre-season forecast methods by stock.

AABM Abundance Indices and Associated Catches

The AIs for the three AABM fisheries, i.e., Southeast Alaska All Gear (SEAK), Northern British Columbia Troll and Queen Charlotte Islands Sport (NBC), and West Coast Vancouver Island Troll and Outside Sport (WCVI), are presented in Table 1. The 1999 Agreement specified that the AABM fisheries were to be managed through the use of the AIs. Pre-season AIs are used to set allowable catch limits for management for the upcoming fishing season. Subsequently, post-season AIs (from the following year's calibration) are used to track overage and underage provisions. Each calibration provides the first post-season AIs for the previous year and the pre-season AIs for the current year. The first 2003 post-season AIs and the 2004 pre-season AIs have now been finalized.

Table 1. Abundance Indices for 1999 to 2004 for the SEAK, NBC, and WCVI AABM fisheries.

Year	SEAK		NBC		WCVI	
	Pre-season	Post-season	Pre-season	Post-season	Pre-season	Post-season
1999	1.15	1.12	1.12	0.97	0.60	0.50
2000	1.14	1.10	1.00	0.95	0.54	0.47
2001	1.14	1.29	1.02	1.22	0.66	0.68
2002	1.74	1.82	1.45	1.63	0.95	0.92
2003	1.79	2.17	1.48	1.90	0.85	1.10
2004	1.88	-	1.67	-	0.90	-

In general, the AIs for 1999 through 2001 are low compared to AIs in the late 1980s and early 1990s but values have increased since 2002. The recent AI values are comparable to the higher values in the time series. The Agreement specifies an allowable catch for each AI for each fishery. The specified Treaty catch by fishery and year and the actual (observed) catches are shown in Table 2.

Table 2. Observed catches and post-season allowable catches for 1999 to 2003, and pre-season allowable catches for 1999 to 2004, for AABM fisheries.

Year	Pacific Salmon Treaty Allowable and Observed Catches								
	SEAK			NBC			WCVI		
	Pre-season Allowable Catch	Post-season Allowable Catch	Observed Catch	Pre-season Allowable Catch	Post-season Allowable Catch	Observed Catch	Pre-season Allowable Catch	Post-season Allowable Catch	Observed Catch
1999	192,800	184,200	198,842	145,600	126,100	92,899	128,300	107,000	36,413
2000	189,900	178,500	186,493	130,000	123,500	31,880	115,500	86,200	101,442
2001	189,900	250,300	186,919	132,600	158,900	43,500	141,200	145,500	117,670
2002	356,500	371,900	357,133	192,700	237,800	137,632	203,200	196,800	166,188
2003	366,000	439,600	380,152	197,100	277,200	191,657	181,800	268,900	175,827
2004	383,500	-	-	243,600	-		192,500	-	-

The Agreement specifies that overage/underage provisions apply to both AABM and ISBM fisheries. However, the CTC identified, in a February 12, 2002 letter to the PSC, major technical obstacles and policy concerns for adjusting harvest levels in response to overages and underages. The major problem identified for AABM fisheries is the confounding of forecast and management error in assessing overages and underages. Forecast error is associated with the accuracy of the pre-season Abundance Indices (Table 1) which in turn is used to determine the preseason estimate of allowable catch. Management error is related to the harvest manager's ability to attain the pre-season estimates of allowable catch. Harvest managers have no prior knowledge of the post-season estimate of allowable catch which can be quite different from the pre-season estimate (Table 2).

Until an approach for full implementation has been developed and accepted by the PSC, the Commissioners have instructed the CTC to track overages and underages relative to agreed-upon harvest objectives. Table 3 shows the difference between the post-season allowable catch and the observed catch in AABM fisheries for 1999–2003, and the cumulative differential for those years. All three AABM fisheries have cumulative underages. In SEAK, observed catches have been below final allowable catches for two of the five years; the cumulative differential is –8.1%. In NBC, observed catches have been below the final allowable catches in all five years; the cumulative differential is –46.1%. In WCVI, observed catches have been below allowable catches for three of the four years; the cumulative differential is –25.7%.

Table 3. Differences between observed Treaty catch and the post-season Treaty allowances as number of fish and percentages of allowable catch for AABM fisheries in 1999 to 2003

Year	SEAK		NBC		WCVI	
	Number of Fish	Percent Difference	Number of Fish	Percent Difference	Number of Fish	Percent Difference
1999	+14,642	+7.9%	-33,201	-26.3%	-70,587	-66.0%
2000	+7,993	+4.5%	-91,620	-74.2%	+15,242	+17.7%
2001	-63,381	-25.3%	-115,400	-72.6%	-27,830	-19.1%
2002	-14,767	-4.0%	-100,168	-42.1%	-30,612	-15.6%
2003	-59,448	-13.5%	-85,543	-30.9%	-93,073	-34.6%
Cum.	-114,961	-8.1%	-425,932	-46.1%	-206,860	-25.7%

ISBM Indices

For ISBM fisheries, the Agreement specified that Canada and the United States would reduce base period exploitation rates on specified stocks by 36.5% and 40%, equivalent to ISBM indices of 63.5% and 60% percent, respectively. This requirement is referred to as the 'general obligation' and does not apply to stock groups that achieve their CTC agreed escapement goals. Estimated ISBM fishery indices are shown in Table 4 for Canadian fisheries and Table 5 for United States (U.S.) fisheries. Both tables present Coded-Wire Tag (CWT)-based indices for 2002, and Chinook model-based indices for 2004. The agreement specifies that the ISBM indices be forecasted pre-season and evaluated post-season for each escapement indicator stock listed in Attachments I to V of the Chinook Chapter.

(1) CWT-based Indices in 2002

All Canadian ISBM indices from the CWT-based estimates for 2002 show that exploitation rates were reduced more than required under the agreement for all stocks or stock groups. Four of the 16 U.S. ISBM indices for the CWT-based estimates for 2002 were reduced more than required under the agreement. Of the 12 U.S. CWT-based ISBM indices that exceeded 0.60, six (Quillayute, Upriver Brights, Mid-Columbia Summers, Nehalem, Siletz, and Siuslaw) have agreed escapement goals and all six exceeded their goal in 2002.

(2) Predicted ISBM Indices for 2004

Nine of the 20 ISBM indices for Canada in 2004 based on outputs from calibration 0404 are above the allowable value of 0.635 for Canadian ISBM fisheries. Only one, Fraser Late, has a CTC agreed escapement goal. Sixteen of the 24 U.S. ISBM indices for 2004 based on the calibration model are above the allowable limit for U.S. ISBM fisheries. Ten of the 16 have CTC agreed escapement goals: Queets, Hoh, Quillayute, Upriver Brights, Lewis, Harrison, Mid-Columbia Summers, Nehalem, Siletz, and Siuslaw.

Table 4. ISBM Indices for Canadian fisheries, CWT-based for 2002, and the predicted indices for 2004 from the PSC Chinook Model. Order of the stock groups correspond to Annex 4, Chapter 3, Attachment IV of the PST 1999 Revised Annexes.

Stock Group	Escapement Indicator Stock	Canadian ISBM Indices	
		CWT Indices for 2002	Model Indices for 2004
Lower Strait of Georgia	Cowichan	0.247	0.593
	Nanaimo	0.247	0.695
Fraser Late	Harrison River ²	0.105	0.719
North Puget Sound	Nooksack	0.023	0.273
Natural Springs	Skagit	NA	0.273
Upper Strait of Georgia	Klinaklini, Kakweikan, Wakeman, Kingcome, Nimpkish	0.063	0.971
Fraser Early (spring and summers)	Upper Fraser, Mid Fraser, Thompson	NA	0.718
West Coast Vancouver Island Falls	WCVI (Artlish, Burman, Kauok, Tahsis, Tashish, Marble)	0.248	0.927
Puget Sound Natural Summer / Falls	Skagit	NA	0.438
	Stillaguamish	NA	0.567
	Snohomish	NA	0.445
	Lake Washington	NA	0.446
	Green River	0.323	0.466
North / Central B. C.	Yakoun, Nass, Skeena, Area 8	NA	0.804
Washington Coastal Fall Naturals ³	Hoko, Grays Harbor, Queets, Hoh, Quillayute	NA	0.435
Columbia River Falls ³	Upriver Brights	NA	0.663
	Deschutes	NA	0.663
	Lewis ²	NA	0.480
Columbia R Summers ³	Mid-Columbia Summers ²	NA	0.333
Far North Migrating OR Coastal Falls ³	Nehalem ² , Siletz ² , Siuslaw ²	NA	0.672

¹ NA means not available because of insufficient data (lack of stock specific tag codes, base period CWT recoveries, etc).

² Stock or stock group with agreed escapement goal.

³ Stock group listed in Annex Table V.

Table 5. ISBM indices for U.S. fisheries, CWT-based for 2002, and the predicted indices for 2004 from the PSC Chinook Model. Order of the stock groups correspond to Annex 4, Chapter 3, Attachment V of the PST 1999 Revised Annexes.

Stock Group	Escapement Indicator Stock	U.S. ISBM Indices	
		CWT Indices for 2002	Model Indices for 2004
Washington Coastal Fall Naturals	Hoko	NA ¹	0.966
	Grays Harbor	0.54	0.573
	Queets	0.84	0.932
	Hoh	0.95	1.214
	Quillayute	1.42	1.139
Columbia River Falls	Upriver Brights	1.32	0.906
	Deschutes	0.59	0.475
	Lewis ⁴	0.56	1.008
Puget Sound Natural Summer / Falls	Skagit	NA	0.157
	Stillaguamish	NA	0.224
	Snohomish	NA	0.110
	Lake Washington	NA	0.411
	Green R	1.07	0.260
Fraser Late	Harrison River ⁴	0.41	1.058
Columbia R Summers	Mid-Columbia Summers ⁴	7.25	0.715
Far North Migrating OR Coastal Falls	Nehalem ⁴	2.17	2.230
	Siletz ⁴	1.31	1.288
	Siuslaw ⁴	2.56	2.816
North Puget Sound Natural Springs	Nooksack	NA	0.974
	Skagit	1.12	0.663
Lower Strait of Georgia ³	Cowichan,	5.78	0.915
	Nanaimo	5.78	0.915
Upper Strait of Georgia ³	Klinaklini, Kakweikan, Wakeman, Kingcome, Nimpkish	NA	NC ²
Fraser Early (spring and summers) ³	Upper Fraser, Mid Fraser, Thompson	NA	0.839
West Coast Vancouver Island Falls ³	WCVI (Artlish, Burman, Kauok, Tahsis, Tashish, Marble)	NA	0.540
North / Central B. C. ³	Yakoun, Nass, Skeena, Area 8	NA	NC

¹ NA means not available because of insufficient data (lack of stock specific tag codes, base period CWT recoveries, etc).

² NC means that the current model assumes the stock is not caught in U.S. ISBM fisheries.

³ Stock group listed in Annex Table IV.

⁴ Stock with agreed escapement goal.

Stock Forecasts

In general, the model does a very good job of matching the agency supplied forecasts (average error = -0.5%, standard deviation = 13%, median error = -0.9%). Agency forecasts are, on average, also good predictors of observed returns (average error = -13.9%, standard deviation = 39%, median error = -12.8%). The model's prediction of observed returns, including stocks for which there is no agency forecast, is also good (average error = -8.6%, standard deviation = 35%, median error = -10.0%).

B. JOINT CHUM TECHNICAL COMMITTEE

FINAL 2002 - 2003 POST SEASON SUMMARY REPORT TCCHUM (05)-1 - February, 2005

This Joint Chum Salmon Technical Committee report presents the appropriate information on chum salmon stocks and fisheries in southern British Columbia and Washington for the years 2002 and 2003. It also addresses the specific provisions and requirements of Chapter 6 of Annex IV of the Pacific Salmon Treaty (PST) (Attachment 1).

The treaty between the governments of Canada and the United States of America (U.S.) concerning Pacific salmon was designed to facilitate co-operation between the two countries in the management, research and enhancement of Pacific salmon stocks. Chapter 6 of Annex IV of the Pacific Salmon Treaty (PST) required that certain fisheries for chum salmon in southern British Columbia (B.C.) and Washington be managed in a specified manner. Other fisheries, while not specifically mentioned in the PST, are known to harvest chum of the other country's origin. This report discusses various aspects of the chum present in Washington State and in B.C. waters between Vancouver Island and the mainland and off the west coast of Vancouver Island, and discusses the management actions of Canada and the U.S. in relation to the PST requirements.

The Chum Annex (Chapter 6 of Annex IV of the PST) had been renewed for one or more years since it was initially negotiated in 1987. However, in 1994, the Parties to the PST were unable to reach agreement on a number of provisions of the PST, including the Chum Annex. Thus, no formal agreement existed for the 1994 season, although the parties essentially continued to observe the provisions of the expired annex.

In 1995 the Parties were able to agree on a Chum Annex that was essentially the same as had existed in the years immediately prior to 1994. This annex was renewed annually until 1999 when a new Chum Annex was negotiated for a term of 10 years (Attachment 1). This new annex was updated to be consistent with changes in the "Clockwork" management strategy implemented by Canada for fisheries in Johnstone Strait. It also included provisions to address the conservation concerns the United States has for Hood Canal and Strait of Juan de Fuca summer chum, which have been listed as a "threatened" species under the United States' Endangered Species Act.

C. JOINT COHO TECHNICAL COMMITTEE

No reports were finalized for publication during this reporting period.

D. JOINT NORTHERN BOUNDARY TECHNICAL COMMITTEE

U.S./CANADA NORTHERN BOUNDARY AREA 2004 SALMON FISHERIES MANAGEMENT REPORT AND 2005 PRELIMINARY EXPECTATIONS TCNB (05)-1 – January, 2005

This report reviews:

- 1) catch, effort, and management actions in the 2004 Northern Boundary Area troll and net fisheries of southern Southeast Alaska Districts 101 to 108 and northern British Columbia Areas 1, 3, 4, and 5;
- 2) management performance relative to Treaty requirements for pink salmon;
- 3) preliminary expectations and fishing plans for 2005.

Historical catch and effort data by district or area, gear, species, and week are no longer reported annually in this report. They can be referenced in *Pacific Salmon Commission, Northern Boundary Technical Committee Report, U.S. / Canada Northern Boundary Area 1999 Salmon Fisheries Management Report and 2000 Preliminary Expectations*. Report TCNB (01)-1, January 2001. If these historical numbers are modified, they will be added as an appendix in a future annual report.

2004 Fisheries

In southern Southeast Alaska the 2004 harvest of pink salmon was 20.9 million, which is 67% of the recent 10-year average of 31.1 million. The southern Southeast pink salmon escapement index of 8.5 million pink salmon was near the upper range of the biological escapement goal of 4.0 to 9.0 million. Southern Southeast Alaska commercial fisheries also harvested 2.2 million chum salmon (10-year avg. is 3.2 million); 1.0 million sockeye (10-year avg. is 1.2 million); and 0.9 million coho salmon (10-year avg. is 1.0 million).

The total Southeast Alaska pink salmon harvest was 45.0 million, which was close to the preseason forecast 50 million (range 24-76 million). In northern inside Southeast Alaska the escapement index of 5.2 million was within the range of 2.5 to 5.5 million. In northern outside Southeast the index of 2.1 million was above the range of 0.75 to 1.75 million.

In the North Coast of British Columbia, sockeye returns were below average for the Skeena sockeye aggregate (total Area 4 commercial net catch was 177,924). Commercial net catch for Nass area sockeye (409,597) was above average, while the estimated escapement of 217,271 was above the 200,000 target. An estimated 921,338 sockeye passed through the Babine fence and enhanced Babine stocks achieved target capacity in the Pinkut and Fulton spawning channels. Meanwhile, returns of non-enhanced Babine stocks were variable. Returns to the Morice and Kitwanga systems were below desired levels but showed improvement over recent years, with estimated escapements of 6,500 and 1,264,

respectively. Pink returns were average in Area 3 and below average in the Skeena (total Areas 3 and 4 net catch 1.1 million). Pink escapements were below target in Areas 3, 4 and 5. Low chum abundance in Areas 3 to 5 resulted in low escapements and catches. Management actions were in place to minimize chum mortality throughout the Areas 3 to 5 net fishing season. The Area 1 troll fishery harvested 27,751 pinks, with low catches attributed to low effort.

E. JOINT TRANSBOUNDARY TECHNICAL COMMITTEE

No reports were finalized for publication during this reporting period.

F. JOINT TECHNICAL COMMITTEE ON DATA SHARING

No reports were finalized for publication during this reporting period.

G. JOINT SELECTIVE FISHERY EVALUATION COMMITTEE

Report of the Regional Coordination Working Group of the Selective Fishery Evaluation Committee .

SFEC (04)-1 – December, 2004

This report provides information on mass marking, mark-selective fisheries and fishery. The PSC Selective Fishery Evaluation Committee (SFEC) is charged with evaluating proposals for Mass Marking (MM) and Mark Selective Fisheries (MSFs) for their potential impacts on the coastwide CWT program (Appendix A). The SFEC include two working groups: the Regional Coordination Work Group (RCWG) and the Analytical Work Group (AWG). The RCWG is tasked with reviewing MM proposals, and the AWG is tasked with reviewing MSF proposals. This report documents the RCWG review of agency MM proposals for 2004.

Agency proposals for 2004 mass marking plans were requested for all hatchery chinook and coho groups expected to be intercepted in Pacific Salmon Commission (PSC) fisheries. As stated in the *Understanding of the PSC concerning Mass Marking and Selective Fisheries* (Appendix A), proposals for continuing programs are requested no later than November 1 of the year prior to implementation. Proposals for new or substantially changed MM proposals are requested by June 1 of the year prior to implementation. A template for MM proposals was developed in 2002, and agencies were asked to provide their information to the SFEC in this format.

**Report of the Regional Coordination Working Group of the Selective Fishery
Evaluation Committee
SFEC (04)-2 – June 2004**

This report provides information on mass marking, mark-selective fisheries and fishery sampling for Oregon, Washington, British Columbia, and Alaska during 2002. The information includes numbers of mass marked fish released, Double Index Tagging, electronic tag detection capabilities, and implementation of mark-selective fisheries.

Releases of mass marked coho in 2002 (2000 brood) from Canadian and U.S. hatcheries occurred largely as planned. Releases totaled 46.6 M compared to 45.3M in 2001. Participating facilities extend from the Columbia and Snake Rivers to the north end of Vancouver Island. There is no mass marking in California, north/central BC or Alaska.

Mass marking of 2000 and 2001 brood chinook from U.S. hatcheries occurred largely as planned. Yearling releases of mass marked chinook continued to increase (from 12.3M 1999 brood to 22.5M 2000 brood). Sub-yearling releases were similar to the 34.1M 2000 brood mass marked chinook released in 2001. Participating facilities extend from the Columbia and Snake Rivers to Puget Sound. There is no mass marking in California, British Columbia or Alaska.

Coho Mark-Selective Fisheries occurred from the Columbia River, along coastal Oregon and Washington, within Puget Sound, within the Strait of Georgia and along the west coast of Vancouver Island. Chinook Mark-Selective Fisheries are much more restricted, with MSFs only occurring in selected areas of the Columbia River and Puget Sound.

Sampling for coded-wire tags in the presence of mass marked fish requires the implementation of electronic detection programs. Not all areas have implemented electronic detection protocols. In particular, Alaska maintains a visual sampling program and Canada relies on the Voluntary Head Recovery Program to obtain tags from anglers.

There are a number of outstanding data management issues related to the implementation of mass marking and mark-selective fisheries. These include the need for reporting imputed mortalities of unmarked CWT recoveries, validation of historic data, standardized data queries and a fisheries regulations file.

Publications of the Pacific Salmon Commission

PART VI

PUBLICATIONS OF THE PACIFIC SALMON COMMISSION

Documents listed herein are available to domestic fishery agencies of Canada and the United States, research organizations, libraries, scientists and others interested in the activities of the Commission, through the offices of the Secretariat, 600 - 1155 Robson Street, Vancouver, B.C., V6E 1B5. Photocopying charges may be levied for documents which are out of print.

Reports published by the Pacific Salmon Commission after March 31, 2000 including Commission annual reports, annual reports of the Fraser River Panel, Joint Technical Committee reports and technical reports of the Pacific Salmon Commission are also available in full text format on the Commission's website at www.psc.org.

Documents listed here are those which were published during the period from 2004/05 inclusive. For previous publications, please refer to the Pacific Salmon Commission's website at www.psc.org/publications.

A. ANNUAL REPORTS

No reports were finalized for publication during this reporting period.

B. REPORTS OF JOINT TECHNICAL COMMITTEES

i. Joint Chinook Technical Committee

43. TCCHINOOK (04)-1 – *Estimation and Application of Incidental Fishing Mortality in Chinook Salmon Management Under the 1999 Agreement to the Pacific Salmon Treaty*, April 2004.
44. TCCHINOOK (04)-2 – *Catch and Escapement of Chinook Salmon Under Pacific Salmon Commission Jurisdiction*, 2003, June 2004.
45. TCCHINOOK (04)-3 – *Standardized Fishing Regimes for Southeast Alaska Chinook Fisheries*, September 2004.
46. TCCHINOOK (04)-4 – *Annual Exploitation Rate Analysis and Model Calibration*, December 2004.

ii. Joint Chum Technical Committee

20. TCCHUM (05-1) – *Final 2002-2003 Post Season Summary Report*, February 2005.

iii. Joint Coho Technical Committee

No reports were finalized for publication during this reporting period.

iv. Joint Data Sharing Technical Committee

No reports were finalized for publication during this reporting period.

v. Joint Northern Boundary Technical Committee

27. TCNB (05)-1 – *U.S./Canada Northern Boundary Area 2004 Salmon Fisheries Management Report and 2005 Preliminary Expectations* – January 2005.

vi. Joint Transboundary Technical Committee

No reports were finalized for publication during this reporting period.

vii. Selective Fishery Evaluation Committee

5. SFEC (04)-1 - *Review of 2004 Mass Marking Proposals* – December 2004.
6. SFEC (04)-2 – *Mass Marking and Mark Selective Fisheries for 2002* – June 2004.

C. REPORTS OF THE FRASER RIVER PANEL

15. *Report of the Fraser River Panel to the Pacific Salmon Commission on the 2001 Fraser River Sockeye and Pink Salmon Fishing Season.* PSC Staff. March 2005.

D. TECHNICAL REPORT SERIES OF THE PACIFIC SALMON COMMISSION

13. English, K.K., W.J. Gazey, D. Peacock, and G. Oliver. *Assessment of the Canadian and Alaskan Sockeye Stocks Harvested in the Northern boundary Fisheries using Run Reconstruction Techniques, 1982-2001.* PSC Tech. Rep. No. 13, December 2004.
14. Andel, J.E. and I.M. Boyce. *Mark-Recapture Studies of Taku River Adult Sockeye Salmon Stocks from 1998 to 2002.* PSC Tech. Rep. No. 14, December 2004.
15. Waugh, B., P. Etherton, S. Stark, and K. Jensen. *Abundance of the Sockeye Salmon Escapement in the Alsek River Drainage, 2004.* PSC Tech. Rep. No. 15, March 2005.

E. PUBLICATIONS BY PACIFIC SALMON COMMISSION SECRETARIAT STAFF

No reports were finalized for publication during this reporting period.

F. REPORTS OF THE INTERNATIONAL PACIFIC SALMON COMMISSION

Responsibility for maintenance of the library of the International Pacific Salmon Fisheries Commission, on its termination December 31, 1985, was transferred to the Pacific Salmon Commission. Documents in the Library include historical archival papers which are available to researchers and other interested parties through contact with the Pacific Salmon Commission's Librarian.

Publication of John F. Roos' History of the International Pacific Salmon Fisheries Commission, and P. Gilhousen's Estimation of Fraser River Sockeye Escapements ended all publication series of the International Pacific Salmon Fisheries Commission. Copies of all in-print Progress Reports and Bulletins of the International Pacific Salmon Fisheries Commission are available free of charge through the Library of the Pacific Salmon Commission. Copies of the History of the International Pacific Salmon Fisheries Commission may also be ordered through the Library of the Pacific Salmon Commission.

G. DOCUMENTS SUBMITTED BY THE PARTIES

In compliance with provisions of the Treaty, the Parties provide annual post-season fishery reports and updates on their respective salmonid enhancement programs to the Commission. Documents received during 2004/05 were:

1. *Post Season Report for 2004 Canadian Treaty Limit Fisheries*. Canada Department of Fisheries and Oceans. December 3, 2004.
2. *Preliminary 2004 Post Season Report for United States Salmon Fisheries of Relevance to the Pacific Salmon Treaty*. United States Section, Pacific Salmon Commission. December, 2004.

Report of the Auditors for 2004/2005

PART VII
AUDITORS' REPORT AND FINANCIAL STATEMENTS
FOR THE PERIOD APRIL 1, 2004 TO MARCH 31, 2005

Financial Statements of

PACIFIC SALMON COMMISSION

Years ended March 31, 2005 and 2004



KPMG LLP
Chartered Accountants
Metrotower II
Suite 2400 - 4720 Kingsway
Burnaby BC V5H 4N2
Canada

Telephone: (604) 527-3600
Fax: (604) 527-3636
Internet: www.kpmg.ca

AUDITORS' REPORT TO THE COMMISSIONERS

We have audited the statement of financial position of the Pacific Salmon Commission as at March 31, 2005 and the statements of financial activities and fund balances and cash flows for the year then ended. These financial statements have been prepared to comply with the Treaty Between the Government of Canada and the Government of the United States of America Concerning Pacific Salmon (the "Treaty"). These financial statements are the responsibility of the Commission's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by the Commission, as well as evaluating the overall financial statement presentation.

In our opinion, these financial statements present fairly, in all material respects, the financial position of the Commission as at March 31, 2005 and the results of its operations and its cash flows for the year then ended in accordance with the basis of accounting described in note 2 to the financial statements.

These financial statements, which have not been, and were not intended to be, prepared in accordance with Canadian generally accepted accounting principles, are solely for the information and use of the Contracting Parties for complying with the Treaty. The financial statements are not intended to be and should not be used by anyone other than the specified users or for any other purpose.

KPMG LLP

Chartered Accountants

Burnaby, Canada

May 13, 2005

KPMG LLP, a Canadian limited liability partnership, is the Canadian member firm of KPMG International, a Swiss cooperative.

PACIFIC SALMON COMMISSION

Statements of Financial Position
(Expressed in Canadian dollars)

March 31, 2005 and 2004

	General Fund (note 4)	Working Capital Fund	Test Fishing Fund	Special Research Fund	Capital Assets Fund	2005 Total	2004 Total
Assets							
Current assets:							
Cash							
and cash equivalents	\$ 976,909	\$ 101,821	\$ 500,598	\$ 153,548	\$ -	\$ 1,732,876	\$ 1,666,421
Accounts receivable	240,921	-	-	-	-	240,921	98,096
Interest receivable	2,703	-	-	-	-	2,703	1,669
Prepaid expenses	11,655	-	-	-	-	11,655	15,384
	1,232,188	101,821	500,598	153,548	-	1,988,155	1,781,570
Capital assets (note 3)	-	-	-	-	463,542	463,542	314,876
	\$ 1,232,188	\$ 101,821	\$ 500,598	\$ 153,548	\$ 463,542	\$ 2,451,697	\$ 2,096,446

Liabilities and Net Assets

Current liabilities:							
Accounts payable and accrued liabilities	\$ 730,794	\$ -	\$ -	\$ -	\$ -	\$ 730,794	\$ 610,545
Accrued benefit obligation (note 6)	1,300	-	-	-	-	1,300	1,920
Deferred revenue	7,034	-	-	-	-	7,034	-
	739,128	-	-	-	-	739,128	612,465
Fund balance (note 4)	493,060	101,821	500,598	153,548	463,542	1,712,569	1,483,981
	\$ 1,232,188	\$ 101,821	\$ 500,598	\$ 153,548	\$ 463,542	\$ 2,451,697	\$ 2,096,446

See accompanying notes to financial statements.

Approved on behalf of the Commission:

Chair, Standing Committee on Finance and Administration

Vice-Chair, Standing Committee on Finance and Administration

PACIFIC SALMON COMMISSION

Statements of Financial Activities and Fund Balances
(Expressed in Canadian dollars)

Years ended March 31, 2005 and 2004

	General Fund	Working Capital Fund	Test Fishing Fund	Special Research Fund	Capital Assets Fund	2005 Total	2004 Total
Fund balance, beginning of year	\$ 417,003	\$ 102,381	\$ 542,563	\$ 107,158	\$ 314,876	\$ 1,483,981	\$ 1,118,559
Revenue:							
Contributions from contracting parties	2,984,234	-	-	-	-	2,984,234	3,012,884
Grants	118,895	-	-	109,848	-	228,743	1,183
Interest	25,052	1,821	-	-	-	26,873	34,251
Gain (loss) on disposal of capital assets	(2,437)	-	-	-	-	(2,437)	1,900
Test fishing	485,019	-	-	-	-	485,019	692,080
	3,610,763	1,821	-	109,848	-	3,722,432	3,742,298
Expenditures:							
Amortization	-	-	-	-	172,113	172,113	140,088
Salaries and employee benefits	2,066,688	-	-	-	-	2,066,688	1,986,071
Travel and transportation	76,134	-	-	19,885	-	96,019	66,504
Rents and communication	97,139	-	-	16,781	-	113,920	100,340
Printing and reproductions	10,790	-	-	-	-	10,790	6,096
Contract services	466,331	-	-	10	-	466,341	389,825
Materials and supplies	45,415	-	-	-	-	45,415	51,945
Foreign exchange	11,356	-	-	-	-	11,356	(33,602)
Test fishing	484,420	-	-	-	-	484,420	649,517
Consultant contracts	-	-	-	26,782	-	26,782	20,092
	3,258,273	-	-	63,458	172,113	3,493,844	3,376,876
Excess (deficiency) of revenue over expenditures	352,490	1,821	-	46,390	(172,113)	228,588	365,422
Transfer to Working Capital Fund	2,381	(2,381)	-	-	-	-	-
Transfer to Test Fishing Fund	41,965	-	(41,965)	-	-	-	-
Transfer to Capital Asset Fund	(320,779)	-	-	-	320,779	-	-
Fund balance, end of year	\$ 493,060	\$ 101,821	\$ 500,598	\$ 153,548	\$ 463,542	\$ 1,712,569	\$ 1,483,981

See accompanying notes to financial statements.

PACIFIC SALMON COMMISSION

Statements of Cash Flows
(Expressed in Canadian dollars)

Years ended March 31, 2005 and 2004

	2005	2004
Cash provided by (used in):		
Operations:		
Excess of revenue over expenditures	\$ 228,588	\$ 365,422
Items not involving cash:		
Amortization	172,113	140,088
Loss (gain) on asset dispositions	2,437	(1,900)
Reduction in accrued benefit asset	-	13,485
Net change in non-cash operating working capital	(13,467)	469,328
	389,671	986,423
Investing:		
Additions to capital assets	(343,624)	(242,107)
Proceeds on sale of assets	20,408	1,900
	(323,216)	(240,207)
Increase in cash and cash equivalents	66,455	746,216
Cash and cash equivalents, beginning of year	1,666,421	920,205
Cash and cash equivalents, end of year	\$ 1,732,876	\$ 1,666,421

See accompanying notes to financial statements.

PACIFIC SALMON COMMISSION

Notes to Financial Statements
(Expressed in Canadian dollars)

Years ended March 31, 2005 and 2004

1. Nature of organization:

The Pacific Salmon Commission was established by Treaty between the Governments of Canada and the United States of America (the "Contracting Parties") to promote cooperation in the management, research and enhancement of Pacific salmon stocks. The Treaty was ratified on March 18, 1985 and renewed on June 30, 1999, and the Commission commenced operations on September 26, 1985.

2. Significant accounting policies:

(a) Basis of accounting:

These financial statements present the financial position and results of operation of the Commission to comply with the requirements of the Treaty between the Government of Canada and the Government of the United States of America concerning Pacific Salmon, and may not be appropriate for other purposes. As required, the financial statements are prepared on an accrual basis except that purchase order expenditures are recognized at the time that the commitment for goods and services are made, rather than at the time that the goods or services are delivered.

(b) Fund accounting:

The Commission follows fund accounting procedures, giving recognition to restrictions on the use of resources specified by the Contracting Parties. The Fund classifications are as follows:

- (i) The General Fund includes funds provided annually through contributions from the contracting parties and any net surplus obtained through the test fishing program. By agreement of the Contracting Parties, any unexpended balance remaining at the end of one fiscal year may be used to offset contributions in the following year or may be used to offset a shortfall between contributions and approved expenditures in the following year.
- (ii) The Capital Assets Fund reflects the Commission's capital asset transactions. Amortization is charged to the Capital Fund.
- (iii) The Working Capital Fund represents monies contributed by the Contracting Parties to be used temporarily pending receipt of new contributions from the Contracting Parties at the beginning of a fiscal year, or for special programs not contained in the regular budget but approved during the fiscal year. Any surplus above a pre-determined fixed limit in the account at the end of the fiscal year is transferred to the General fund and is treated as income.
- (iv) The Test Fishing Fund is established as a revolving fund in which a portion of net test fishing revenues realized in years of high abundance are reserved to be used to support test fishing programs in year of low abundance and when conservation concerns are an issue.

PACIFIC SALMON COMMISSION

Notes to Financial Statements
(Expressed in Canadian dollars)

Years ended March 31, 2005 and 2004

2. Significant accounting policies (continued):

(b) Fund accounting (continued):

- (v) The Special Research Fund represents monies set aside to fund additional programs as determined by the Contracting Parties, including late run Sockeye initiatives and studies related to Coho and Chinook salmon.

(c) Revenue recognition:

The Commission follows the restricted fund method of accounting for contributions from Contracting Parties. Externally restricted contributions are recognized as revenue in the year in which they are received and the related expenses are incurred. Unrestricted contributions or other income are recognized as revenue when the amount can be reasonably estimated and collection is reasonably assured.

(d) Trust funds:

The Commission administers and holds in trust the Northern Boundary and Transboundary Rivers Restoration and Enhancement Trust Fund and the Southern Boundary Restoration and Enhancement Trust Fund. Accordingly, the trust funds' balances of activities for the year have been excluded from the Commission's financial statements. Expenditures are incurred by the Commission as directed by the respective fund committees. Schedules 1 and 2 provide details of these trust funds' balances and activities for the year.

(e) Portfolio investments:

Portfolio investments are recorded at lower of cost and other than temporary decline in market value. Gains and losses are recognized when they are realized at the trust level.

(f) Capital assets:

Capital assets are stated at cost. Costs of repairs and replacements of a routine nature are charged as a current expenditure while those expenditures which improve or extend the useful life of the assets are capitalized. Amortization is provided using the straight-line method of rates sufficient to amortize the costs over the estimated useful lives of the assets. The rates of amortization used on an annual basis are:

Automobiles	20%
Boats	20%
Computer equipment and software	30%
Equipment	20%
Furniture and fixtures	10%
Leasehold improvements	10%

PACIFIC SALMON COMMISSION

Notes to Financial Statements
(Expressed in Canadian dollars)

Years ended March 31, 2005 and 2004

2. Significant accounting policies (continued):

(g) Income taxes:

The Commission is a non-taxable organization under the Privileges and Immunities (International Organizations) Act (Canada).

(h) Post-employment benefits:

The Commission provides certain employee future benefits, including a defined benefit pension plan, which is funded by the Commission on an annual basis, and severance, life insurance and medical benefits, which are funded by the Commission as they become due.

The Commission accrues its obligations under employee benefit plans and the related costs as benefits are earned, net of returns on plan assets.

The Commission's policies are as follows:

- (i) The cost of retirement benefits earned by employees is actuarially determined using the projected benefit method prorated on service and management's best estimate of expected plan investment performance, salary escalation and retirement ages of employees.
- (ii) The expected interest cost on any prior service obligation is calculated using management's estimate for the long-term rate of return.
- (iii) The expected return on plan assets is calculated at a market-related value for the assets.
- (iv) Any cumulative unrecognized actuarial gains and losses in excess of 10% of the projected benefit obligation will be amortized over the expected average remaining service life of the employee group covered by the program.
- (v) As at April 1, 2005, the Commission had an estimated transition asset of \$17,904, which is being amortized over 15 years, which is the expected average remaining service life of the related employee group.

(i) Foreign exchange translation:

Transactions originating in foreign currencies are translated at the exchange rate prevailing at the transaction dates. Assets and liabilities denominated in foreign currency at the balance sheet date are translated to equivalent Canadian amounts at the current rate of exchange. Foreign exchange gains and losses resulting from translation are included in the determination of excess or deficiency of revenue over expenditures.

PACIFIC SALMON COMMISSION

Notes to Financial Statements
(Expressed in Canadian dollars)

Years ended March 31, 2005 and 2004

2. Significant accounting policies (continued):

(j) Use of estimates:

The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenditures during the reporting period. Significant areas requiring the use of management estimates relate to the determination of the valuation of accounts receivable, useful lives of capital assets for amortization and accrued liabilities. Actual results could differ from those estimates. Adjustments, if any, will be reflected in operations in the period of settlement.

3. Capital assets:

	Cost	Accumulated amortization	2005 Net book value	2004 Net book value
Automobiles	\$ 213,130	\$ 165,539	\$ 47,591	\$ 32,507
Boats	125,635	94,692	30,943	31,170
Computer equipment	606,542	530,507	76,035	98,392
Computer software	170,607	150,871	19,736	17,544
Equipment	873,735	663,504	210,231	81,474
Furniture and fixtures	303,403	243,950	59,453	30,234
Leasehold improvements	59,552	39,999	19,553	23,555
	\$ 2,352,604	\$ 1,889,062	\$ 463,542	\$ 314,876

4. General fund balance:

The Commission has approved a carryover of the unexpended funds in the General Fund to be utilized as follows:

	2005	2004
Continuing operations	\$ 481,405	\$ 401,619
Reserve for prepaid expenses	11,655	15,384
	\$ 493,060	\$ 417,003

PACIFIC SALMON COMMISSION

Notes to Financial Statements
(Expressed in Canadian dollars)

Years ended March 31, 2005 and 2004

5. Contracting parties:

The Commission's only related parties are the Contracting Parties.

During the fiscal year ended March 31, 2005, the Commission received contributions from Contracting Parties totaling \$2,984,234 (2004 - \$3,012,884). The Commission made no expenditures on behalf of the Contracting Parties during the year.

6. Employee benefits:

The Commission and its employees contribute to the Pension Plan of the International Fisheries Commissions Pension Society for Employees of Participating Commissions with Headquarters in Canada, a multi-employer defined benefit plan. The plan covers 71 employees, of which 43 are employees of the Commission.

The Commission's liabilities are based on an actuarial valuation using an early measurement date of January 1, 2005.

	Pension Plan	
	2005	2004
Reconciliation of accrued benefit asset (obligation):		
Opening balance	\$ (4,867,954)	\$ (4,444,695)
Current service cost	(212,000)	(180,341)
Benefits paid	170,732	142,925
Interest cost	(297,777)	(282,184)
Actuarial loss	(1,314,634)	(103,659)
Ending balance	\$ (6,521,633)	\$ (4,867,954)
Reconciliation of plan assets:		
Opening balance	\$ 4,209,741	\$ 3,794,268
Actual return on plan assets	350,991	378,057
Employer contributions	132,000	103,091
Employee contributions	80,000	77,250
Benefits paid	(170,732)	(142,925)
Ending balance	\$ 4,602,000	\$ 4,209,741
Fund status - deficit	\$ (1,919,633)	\$ (658,213)
Unamortized transitional obligation and actuarial gain	1,918,333	656,293
Accrued benefit liability	\$ (1,300)	\$ (1,920)

PACIFIC SALMON COMMISSION

Notes to Financial Statements
(Expressed in Canadian dollars)

Years ended March 31, 2005 and 2004

6. Employee benefits (continued):

The significant actuarial assumptions adopted in measuring the Commission's accrued pension benefit liability are as follows:

	2005	2004
Discount rate	6.00%	6.25%
Expected long-term rate of return on plan assets	7.00%	7.00%

The plan asset portfolio currently comprises equity investments and debt. Equity investments are 60.87% (2004 - 56.5%) of the portfolio and include Canadian, International and real estate investments. Debt is 39.13% (2004 - 43.5%) of the portfolio and comprises short-term debt, bonds and mortgages. Asset mix is reviewed periodically and may vary in the future.

The Commission's net benefit plan expense is as follows:

	2005	2004
Current service cost (less employee contributions)	\$ 132,000	\$ 103,091
Interest cost	297,777	282,184
Expected return on plan assets	(296,686)	(266,908)
Amortization of transitional asset, actuarial gains and losses	(1,791)	(1,791)
Net benefit plan expense	\$ 131,300	\$ 116,576

7. Financial instruments:

The financial instruments consist of amounts receivable, interest receivable and amounts payable and accrued liabilities. The carrying amounts of these financial instruments are a reasonable estimate of their fair values.

PACIFIC SALMON COMMISSION

Notes to Financial Statements
(Expressed in Canadian dollars)

Years ended March 31, 2005 and 2004

8. Trust funds:

(a) Northern Boundary and Transboundary Rivers Restoration and Enhancement Trust Fund:

The Commission holds contributions in trust for this Fund. The income earned on these contributions is distributed by the Commission as directed by the Northern Enhancement Committee. Schedule 1 provides details of this trust fund's balances and activities for the year.

(b) Southern Boundary and Transboundary Rivers Restoration and Enhancement Trust Fund:

The Commission holds contributions in trust for this Fund. The income earned on these contributions is distributed by the Commission as directed by the Southern Enhancement Committee. Schedule 2 provides details of this trust fund's balances and activities for the year.

Summary of trust fund balances and activities:

	2005	2004
Assets:		
Cash and term deposits	\$ 7,697,711	\$ 295,032
Portfolio investments	200,964,363	200,224,137
Receivables	212	5,042
	<u>\$ 208,662,286</u>	<u>\$ 200,524,211</u>
Liabilities and Net Assets:		
Accounts payable and accrued liabilities	\$ 885,362	\$ 268,184
Fund balances	207,776,924	200,256,027
	<u>\$ 208,662,286</u>	<u>\$ 200,524,211</u>
Summary of activities:		
Fund balances, beginning of year	\$ 200,256,027	\$ 145,524,806
Contributions	-	54,602,760
Investment income	17,759,170	8,622,587
Foreign exchange loss	(4,424,509)	(7,176,864)
Fund expenditures	(5,813,764)	(1,317,262)
Fund balances, end of year	<u>\$ 207,776,924</u>	<u>\$ 200,256,027</u>



KPMG LLP
Chartered Accountants
Metrotower II
Suite 2400 - 4720 Kingsway
Burnaby BC V5H 4N2
Canada

Telephone (604) 527-3600
Fax (604) 527-3636
Internet www.kpmg.ca

AUDITORS' REPORT ON SUPPLEMENTARY INFORMATION TO THE COMMISSIONERS

We have audited and reported separately herein on the financial statements of Pacific Salmon Commission (the "Commission") as at and for the year ended March 31, 2005.

Our audit was conducted for the purpose of forming an opinion on the financial statements taken as a whole. The Commission holds contributions in trust for the Northern Boundary and Transboundary Rivers Restoration and Enhancement Trust Fund and for the Southern Boundary Restoration and Enhancement Trust Fund. The current year's supplementary information included in Schedules 1 and 2 is presented for purposes of additional analysis and is not a required part of the financial statements. Such supplementary information has been subjected to the auditing procedures applied in the audit of the financial statements and, in our opinion, is fairly stated in all material respects in relation to the financial statements taken as a whole.

KPMG LLP

Chartered Accountants

Burnaby, Canada

May 13, 2005

PACIFIC SALMON COMMISSION

Trust Fund Balances and Activity

Schedule 1

Northern Boundary and Transboundary Rivers Restoration
and Enhancement Trust Fund
(Expressed in Canadian dollars)

March 31, 2005 and 2004

	2005	2004
Assets		
Cash and term deposits	\$ 4,276,729	\$ 148,663
Portfolio investments (market value - \$109,460,681)	107,665,740	106,865,627
Interest receivable	37	444
Accounts receivable	-	2,100
	<u>\$ 111,942,506</u>	<u>\$ 107,016,834</u>
Liabilities		
Accounts payable and accrued liabilities	\$ 116,221	\$ 142,706
Fund balance	111,826,285	106,874,128
	<u>\$ 111,942,506</u>	<u>\$ 107,016,834</u>
Summary of Activity		
Fund balance, beginning of year	\$ 106,874,128	\$ 72,753,461
Revenue:		
Contributions	-	34,126,725
Interest	7,283	144,019
Other income	-	16,800
Realized gain on investments	9,536,257	4,472,517
	<u>9,543,540</u>	<u>38,760,061</u>
Expenditures:		
Salaries and benefits	62,020	61,183
Travel and accommodation	43,156	13,048
Rents and communications	666	354
Contract services	635,758	615,777
Project grants	1,475,159	-
Materials and supplies	511	-
	<u>2,217,270</u>	<u>690,362</u>
Net activity before foreign exchange adjustment	114,200,398	110,823,160
Foreign exchange loss	(2,374,113)	(3,949,032)
Fund balance, end of year	<u>\$ 111,826,285</u>	<u>\$ 106,874,128</u>

PACIFIC SALMON COMMISSION

Trust Fund Balances and Activity

Schedule 2

Southern Boundary Restoration and Enhancement Trust Fund
(Expressed in Canadian dollars)

March 31, 2005 and 2004

	2005	2004
Assets		
Cash and term deposits	\$ 3,420,982	\$ 146,369
Portfolio investments (market value - \$94,150,732)	93,298,623	93,358,510
Interest receivable	175	398
Accounts receivable	-	2,100
	<u>\$ 96,719,780</u>	<u>\$ 93,507,377</u>
Liabilities		
Accounts payable and accrued liabilities	\$ 769,141	\$ 125,478
Fund balance	95,950,639	93,381,899
	<u>\$ 96,719,780</u>	<u>\$ 93,507,377</u>
Summary of Activity		
Fund balance, beginning of year	\$ 93,381,899	\$ 72,771,345
Revenue:		
Contributions	-	20,476,035
Interest	4,531	95,345
Other income	-	16,800
Realized gain on investments	8,211,099	3,877,106
	<u>8,215,630</u>	<u>24,465,286</u>
Expenditures:		
Salaries and benefits	62,057	61,183
Travel and accommodation	30,170	4,453
Rents and communications	1,054	184
Contract services	593,292	561,080
Project grants	2,909,102	-
Materials and supplies	819	-
	<u>3,596,494</u>	<u>626,900</u>
Net activity before foreign exchange	98,001,035	96,609,731
Foreign exchange loss	(2,050,396)	(3,227,832)
Fund balance, end of year	<u>\$ 95,950,639</u>	<u>\$ 93,381,899</u>

Appendices

Appendix A

Exchange of Diplomatic Notes Regarding Amendments to Chapters 1 and 4 of Annex IV of the Treaty

No. 264

Embassy of the United States of America
Ottawa, April 26, 2005

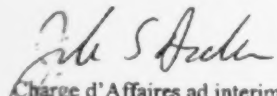
Excellency:

I have the honor to refer to the Treaty between the Government of the United States of America and the Government of Canada Concerning Pacific Salmon, signed at Ottawa January 28, 2005, as amended, and to the recommendations made by the Pacific Salmon Commission on February 21, 2005, in accordance with Article XIII, paragraphs 2 and 3 of the Treaty.

In accordance with Article XIII, paragraph 3, of the Treaty, I have the further honor to propose that Chapters 1 and 4 of Annex IV of the Treaty be amended to read as set forth in the enclosures to this note.

I have the further honor to propose that, if this proposal is acceptable to the Government of Canada, this note, with its enclosures, and Your Excellency's note in reply to that effect, shall constitute an agreement between our two Governments amending Annex IV of the Treaty, which shall enter into force on the date of Your Excellency's Note in reply.

Accept, Excellency, the renewed assurances of my highest consideration.


Charge d'Affaires ad interim

Enclosures:

1. Annex IV, Chapter 1
2. Annex IV, Chapter 4

His Excellency

Pierre Pettigrew

Minister of Foreign Affairs and International Trade
Of Canada,

Ottawa

DIPLOMATIC NOTE



Excellency,

I have the honour to acknowledge receipt of your Note no. 264 of April 26, 2005, regarding Amendments to the Treaty between the Government of Canada and the Government of the United States of America concerning Pacific Salmon, signed at Ottawa on 28 January 1985, as amended, which reads as follows:

"Excellency,

I have the honor to refer to the Treaty between the Government of the United States of America and the Government of Canada Concerning Pacific Salmon, signed at Ottawa January 28, 1985, as amended, and to the recommendations made by the Pacific Salmon Commission on February 21, 2005, in accordance with Article XIII, paragraphs 2 and 3 of the Treaty.

In accordance with Article XIII, paragraph 3, of the Treaty, I have the further honor to propose that Chapters 1 and 4 of Annex IV of the Treaty be amended to read as set forth in the enclosures to this note.

I have the further honor to propose that, if this proposal is acceptable to the Government of Canada, this Note, with its enclosures, and Your Excellency's Note in reply to that effect, shall constitute an agreement between our two Governments amending Annex IV of the Treaty, which shall enter into force on the date of Your Excellency's Note in reply.

Accept, Excellency, the renewed assurances of my highest consideration.

Charge d'Affaires ad interim

Enclosures:

1. Annex IV, Chapter 1
2. Annex IV, Chapter 4"

His Excellency
John S. Dickson
Charge d'Affaires ad interim
Embassy of the United States of America

.../2

I have the further honour to inform you that the proposals outlined in your Note are acceptable to the Government of Canada

Therefore, your Note, with its enclosures, and this Note in reply, with its enclosures, which are equally authentic in English and French, shall constitute an Agreement between the Government of Canada and the Government of the United States of America amending their 1985 Treaty, as amended, concerning Pacific Salmon, which will enter into force on the date of this reply.

Accept, Excellency, the renewed assurances of my highest consideration.



Legal Adviser

Ottawa, June 17, 2005



PACIFIC SALMON COMMISSION

ESTABLISHED BY TREATY BETWEEN CANADA
AND THE UNITED STATES OF AMERICA
MARCH 18, 1985

600 - 1155 ROBSON STREET
VANCOUVER, B.C. V6E 1B5
TELEPHONE: (604) 684-8081
FAX: (604) 666-8707

February 18, 2005

Secretary of State Condoleezza Rice
U.S. Department of State
2201 C Street N.W.
Washington, DC 20520

Secretary Carlos Gutierrez
Office of the Secretary
U.S. Department of Commerce
Room 5516, 1401 Constitution Avenue N.W.
Washington DC 20230

The Honourable Geoff Regan
Minister of Fisheries and Oceans
House of Commons
Parliament Buildings
Wellington Street
Ottawa ON K1A 0A6

The Honourable Pierre Pettigrew
Minister of Foreign Affairs
Office of the Minister of Foreign Affairs
125 Sussex Drive
Ottawa ON K1A 0G2

I have the honor to report to you on understandings that have been reached by the Pacific Salmon Commission and to recommend changes to Annex IV of the Pacific Salmon Treaty.

In accordance with Article XIII, Paragraph 2 of the Treaty, the Commission recommends implementation of the following:

1. Transboundary Rivers – Annex IV, Chapter 1

With respect to Transboundary Rivers, the Commission has agreed to revised Annex language in Paragraph 3 related to Stikine River sockeye, coho and Chinook salmon; Taku River Chinook; and Alsek River Chinook, sockeye and coho salmon. The entirety of the revised Chapter 1 is attached as Attachment A.

2. Fraser River Sockeye and Pink Salmon – Annex IV, Chapter 4

With respect to the Fraser River Chapter, the Commission has agreed to revised Annex language in Chapter 4 that reflects previous Commission Guidance to the Fraser Panel that has now been incorporated into Annex language. The entirety of the revised Chapter 4 is attached as Attachment B.

The Commission expects the relevant management agencies will manage fisheries under their responsibility consistent with these agreements.

The Commission respectfully requests your early approval of these recommendations.

Yours truly,

Paul Sprout
Chair, Pacific Salmon Commission

Amendments to Annex IV
Chapter 1: Transboundary Rivers:
Transboundary Panel Bilateral Agreement

Stikine River sockeye salmon:

Annex IV, Chapter 1, Paragraph 3(a)(1)

- (iv) Pursuant to this agreement, a directed U.S. subsistence fishery in U.S. portions of the Stikine River will be permitted, with a guideline harvest level of 600 sockeye salmon to be taken between July 1 and July 31. These fish will be part of the existing U.S. allocation of Stikine River sockeye salmon. For this fishery:
- a. The fishing area will include the main stem of the Stikine River, downstream of the international border, with the exception that fishing at stock assessment sites identified prior to each season is prohibited unless allowed under specific conditions agreed to by both Parties' respective managers.
 - b. Catches will be reported weekly, including all incidentally caught fish. All tags recovered shall be submitted to the Alaska Department of Fish and Game.
 - c. A written report on the fishery summarizing harvests, fishing effort and other pertinent information requested by the Transboundary Panel will be submitted by the management agency for consideration by the Panel at its annual post season meeting.
 - d. Any proposed regulatory changes to the fishery during the remaining years of this annex would need to be reviewed by the bilateral TBR Panel and approved by the Pacific Salmon Commission.

Stikine River coho salmon:

Annex IV, Chapter 1, Paragraph 3(a)(2)

- (i) By 2008, the Parties agree to develop and implement an abundance-based approach to managing coho salmon on the Stikine River. Assessment programs need to be further developed before a biologically based escapement goal can be established.
- (ii) In the interim, the United States' management intent is to ensure sufficient coho enter the Canadian section of the Stikine River to meet the agreed spawning objective, plus an annual Canadian catch of 5,000 coho salmon in a directed coho salmon fishery.
- (iii) Pursuant to this agreement, a directed U.S. subsistence fishery in U.S. portions of the Stikine River will be permitted, with a guideline harvest level of 400 coho salmon to be taken between August 15 and October 1. For this fishery:
 - a. The fishing area will include the main stem of the Stikine River, downstream of the international border, with the exception that fishing at stock assessment sites identified prior to each season is prohibited unless allowed under specific conditions agreed to by both Parties' respective managers.
 - b. Catches will be reported weekly, including all incidentally caught fish. All tags recovered shall be submitted to the Alaska Department of Fish and Game.
 - c. A written report on the fishery summarizing harvests, fishing effort and other pertinent information requested by the Transboundary Panel will be submitted by the management agency for consideration by the Panel at its annual post season meeting.

- d. Any proposed regulatory changes to the fishery during the remaining years of this annex would need to be reviewed by the bilateral TBR Panel and approved by the Pacific Salmon Commission.

h. Stikine River Chinook salmon:

Annex IV, Chapter I, Paragraph 3(a) (3)

- (i) This agreement shall apply in 2005 through 2008.
- (ii) This agreement shall apply to large (greater than 659 mm mid-eye to fork length) Chinook salmon originating in the Stikine River.
- (iii) Both Parties shall take the appropriate management action to ensure that the necessary escapement goals for Chinook salmon bound for the Canadian portions of the Stikine River are achieved. The Parties agree to share in the burden of conservation. Fishing arrangements must take biodiversity and eco-system requirements into account.
- (iv) Consistent with paragraph 2 above, management of directed fisheries will be abundance-based through an approach developed by the Committee. The Parties agree to implement assessment programs in support of the abundance-based management regime.
- (v) Unless otherwise agreed, directed fisheries on Stikine River Chinook salmon will occur only in the Stikine River drainage in Canada, and in District 108 in the U.S.
- (vi) Pursuant to this agreement, a directed U.S. subsistence fishery in U.S. portions of the Stikine River will be permitted, with a guideline harvest level of 125 Chinook salmon to be taken between May 15 and June 20. For this fishery:
 - a. The fishing area will include the main stem of the Stikine River, downstream of the international border, with the exception that fishing at stock assessment sites identified prior to each season is prohibited unless allowed under specific conditions agreed to by both Parties' respective managers.
 - b. Catches will be reported weekly, including all incidentally caught fish. All tags recovered shall be submitted to the Alaska Department of Fish and Game.
 - c. A written report on the fishery summarizing harvests, fishing effort and other pertinent information requested by the Transboundary Panel will be submitted by the management agency for consideration by the Panel at its annual post season meeting.
 - d. Any proposed regulatory changes to the fishery during the remaining years of this annex would need to be reviewed by the bilateral TBR Panel and approved by the Pacific Salmon Commission.
- (vii) Management of Stikine River Chinook salmon will take into account the conservation of specific stocks or conservation units when planning and prosecuting their respective fisheries. To avoid over-harvesting of specific components of the run, weekly guideline harvests will be developed by the Parties by apportioning their allowable harvest over the total Chinook season based on historical weekly run timing.
- (viii) By 2008, the Parties agree to develop and implement through the Committee an agreed Chinook stock identification program to assist the management of Stikine Chinook salmon.

- (ix) The current MSY escapement goal point estimate (N_{MSY}) for above-border Stikine River Chinook salmon is 17,400 fish (greater than 659 mm mid-eye to fork length) with a range of 14,000 to 28,000 fish. This goal is subject to periodic review by the Parties.
- (x) A preseason forecast of the Stikine River Chinook salmon terminal run⁵ size will be made by the Committee by February 1 of each year.
- (xi) In 2005 and 2006, directed fisheries may be implemented based on preseason forecasts only if the preseason forecast terminal run size equals or exceeds the upper end of the MSY escapement goal range plus the combined Canada, U.S. and test fishery base level catches (BLCs) of Stikine River Chinook salmon. The preseason forecast will only be used for management until inseason projections become available.
- (xii) For the purposes of determining whether to allow directed fisheries using inseason information in 2005 and 2006, such fisheries will not be implemented unless the projected terminal run size exceeds the mid-point of the escapement goal range plus the combined Canada, U.S. and test fishery BLCs of Stikine River Chinook salmon. The Committee shall determine when inseason projections can be used for management purposes and shall establish the methodology for inseason projections and update them weekly or at other agreed intervals.
- (xiii) If escapements in 2005 and 2006 are less than the escapement goal point estimate (N_{MSY}), the Parties agree to review the 2005 and 2006 directed fisheries and implement additional precautionary management measures intended to achieve the escapement goal point estimate (N_{MSY}) in 2007 and 2008.
- (xiv) In 2007 and 2008, directed fisheries may be implemented based on preseason forecasts only if the preseason forecast terminal run size equals or exceeds the escapement goal point estimate (N_{MSY}) plus the combined Canada, U.S. and test fishery base level catches (BLCs) of Stikine River Chinook salmon. The preseason forecast will only be used for management until inseason projections become available.
- (xv) For the purposes of determining whether to allow directed fisheries using inseason information in 2007 and 2008, such fisheries will not be implemented unless the projected terminal run size exceeds the escapement goal point estimate (N_{MSY}) plus the combined Canada, U.S. and test fishery BLCs of Stikine River Chinook salmon. The Committee shall determine when inseason projections can be used for management purposes and shall establish the methodology for inseason projections and update them weekly or at other agreed intervals.
- (xvi) The allowable catch (AC) will be calculated as follows:

$$[\text{Base terminal run (BTR)} = \text{escapement target} + \text{test fishery BLC} + \text{U.S. BLC} + \text{Cdn BLC}]$$

$$[\text{Terminal run} - (\text{BTR}) = \text{AC}]$$
- (xvii) BLCs include the following:
 - a. U.S. Stikine BLC: 3,400 large Chinook⁶;
 - b. Canadian Stikine BLC: 2,300 large Chinook⁷;

⁵ Terminal run = total Stikine Chinook run size minus the US troll catch of Stikine Chinook salmon outside District 108.

⁷ Includes average combined US gillnet, troll and sport catches of Stikine Chinook salmon in District 108.

c. Test fishery: 1,400 large Chinook.

(xviii) Harvest sharing and accounting of the AC shall be as follows:

Allowable Catch Range		Allowable Catch Share			
		U.S.		Canada	
Lower	Upper	Lower	Upper	Lower	Upper
0	5,000	0	500	0	4,500
5,001	20,000	501	11,000	4,500	9,000
20,001	30,000	11,001	17,500	9,000	12,500
30,001	50,000	17,501	30,500	12,500	19,500
50,001	100,000	30,501	63,000	19,500	37,000

Within each Allowable Catch Range, each Party's Allowable Catch Share will be calculated proportional to where the AC occurs within the range.

- (xix) The U.S. catch of the Stikine Chinook salmon AC will not count towards the SEAK AABM allocation. In particular:
- non-Stikine Treaty Chinook salmon harvested in District 108 will continue to count toward the SEAK AABM harvest limit;
 - the U.S. BLC of Stikine Chinook salmon in District 108 will count toward the SEAK AABM harvest limit;
 - the U.S. catch of Stikine Chinook salmon in District 108 above the U.S. BLC will not count towards the SEAK AABM allocation.

Accounting for the SEAK AABM Chinook salmon catches as pertains to transboundary rivers harvests will continue to be the responsibility of the Chinook Technical Committee as modified by (a) through (c) above.

- (xx) With the exception of the provisions included in paragraph (vi) above, the Parties shall determine the domestic allocation of their respective harvest shares.
- (xxi) When the terminal run is insufficient to provide for the Party's Stikine Chinook BLC and the lower end of the escapement goal range, the reductions in each Party's base level fisheries, i.e. the fisheries that contributed to the BLCs, will be proportionate to the BLC shares, excluding the test fishery.
- (xxii) If the escapement of Stikine River Chinook salmon is below the lower bound of the agreed escapement range for three consecutive years, the Parties will examine the management of base level fisheries and any other fishery which harvests Stikine River Chinook salmon stocks, with a view to rebuilding the escapement.

Taku River Chinook salmon:

Annex IV, Chapter 1, Paragraph 3(b)(3)

- (i) This agreement shall apply in 2005 through 2008.

³ Includes average combined Canadian Aboriginal, commercial and sport catches of Stikine Chinook salmon.

- (ii) This agreement shall apply to large (greater than 659 mm mid-eye to fork length) Chinook salmon originating in the Taku River.
- (iii) Both Parties shall take the appropriate management action to ensure that the necessary escapement goals for Chinook salmon bound for the Canadian portions of the Taku River are achieved. The Parties agree to share in the burden of conservation. Fishing arrangements must take biodiversity and eco-system requirements into account.
- (iv) Consistent with paragraph 2 above, management of directed fisheries will be abundance-based through an approach developed by the Committee. The Parties agree to implement assessment programs in support of the abundance-based management regime.
- (v) Unless otherwise agreed, directed fisheries on Taku River Chinook salmon will occur only in the Taku River drainage in Canada, and in District 111 in the U.S.
- (vi) Management of Taku River Chinook salmon will take into account the conservation of specific stocks or conservation units when planning and prosecuting their respective fisheries. To avoid over-harvesting of specific components of the run, weekly guideline harvests will be developed by the Parties by apportioning their allowable harvest over the total Chinook season based on historical weekly run timing.
- (vii) By 2008, the Parties agree to develop and implement through the Committee an agreed Chinook stock identification program to assist the management of Taku Chinook salmon.
- (viii) The current MSY escapement goal point estimate (N_{MSY}) for above-border Taku River Chinook salmon is 36,000 fish (greater than 659 mm mid-eye to fork length) with a range of 30,000 to 55,000 fish. This goal is subject to periodic review by the Parties.
- (ix) A preseason forecast of the Taku River Chinook salmon terminal run^{*} size will be made by the Committee by February 1 of each year.
- (x) In 2005 and 2006, directed fisheries may be implemented based on preseason forecasts only if the preseason forecast terminal run size equals or exceeds the upper end of the MSY escapement goal range plus the combined Canada, U.S. and test fishery base level catches (BLCs) of Taku River Chinook salmon. The preseason forecast will only be used for management until inseason projections become available.
- (xi) For the purposes of determining whether to allow directed fisheries using inseason information in 2005 and 2006, such fisheries will not be implemented unless the projected terminal run size exceeds the mid-point of the escapement goal range plus the combined Canada, U.S. and test fishery BLCs of Taku River Chinook salmon. The Committee shall determine when inseason projections can be used for management purposes and shall establish the methodology for inseason projections and update them weekly or at other agreed intervals.
- (xii) If escapements in 2005 and 2006 are less than the escapement goal point estimate (N_{MSY}), the Parties agree to review the 2005 and 2006 directed fisheries and implement additional precautionary management measures intended to achieve the escapement goal point estimate (N_{MSY}) in 2007 and 2008.

^{*} Terminal run = total Taku Chinook run size minus the US troll catch of Taku Chinook salmon outside District 111.

- (xiii) In 2007 and 2008, directed fisheries may be implemented based on preseason forecasts only if the preseason forecast terminal run size equals or exceeds the escapement goal point estimate (N_{MSY}) plus the combined Canada, U.S. and test fishery base level catches (BLCs) of Taku River Chinook salmon. The preseason forecast will only be used for management until inseason projections become available.
- (xiv) For the purposes of determining whether to allow directed fisheries using inseason information in 2007 and 2008, such fisheries will not be implemented unless the projected terminal run size exceeds the escapement goal point estimate (N_{MSY}) plus the combined Canada, U.S. and test fishery BLCs of Taku River Chinook salmon. The Committee shall determine when inseason projections can be used for management purposes and shall establish the methodology for inseason projections and update them weekly or at other agreed intervals.
- (xv) The allowable catch (AC) is calculated as follows:
- [Base terminal run (BTR) = escapement target + test fishery BLC + U.S. BLC + Cdn BLC]
- [Terminal run - (BTR) = AC]
- (xvi) BLCs include the following:
- a. U.S. Taku BLC: 3,500 large Chinook⁹
 - b. Canadian Taku BLC: 1,500 large Chinook¹⁰
 - c. Test fishery: 1,400 large Chinook;
- (xvii) Harvest sharing and accounting of the AC shall be as follows:

Allowable Catch Range		Allowable Catch Share			
		U.S.		Canada	
Lower	Upper	Lower	Upper	Lower	Upper
0	5,000	0	0	0	5,000
5,001	20,000	1	11,000	5,000	9,000
20,001	30,000	11,001	17,500	9,000	12,500
30,001	50,000	17,501	30,500	12,500	19,500
50,001	100,000	30,501	63,000	19,500	37,000

Within each Allowable Catch Range, each Party's Allowable Catch Share will be calculated proportional to where the AC occurs within the range.

- (xviii) The U.S. catch of the Taku Chinook salmon AC will not count towards the SEAK AABM allocation. In particular:
- a. non-Taku Treaty Chinook salmon harvested in District 111 will continue to count toward the SEAK AABM harvest limit;
 - b. the U.S. BLC of Taku Chinook salmon in District 111 will count toward the SEAK AABM harvest limit;

⁹ Includes average combined US gillnet and sport catches of Taku Chinook salmon in District 111.

¹⁰ Includes average combined Canadian Aboriginal, commercial and estimated sport catch of Taku Chinook salmon.

- c. the U.S. catch of Taku Chinook salmon in District 111 above the U.S. BLC will not count towards the SEAK AABM allocation.

Accounting for the SEAK AABM Chinook salmon catches as pertains to transboundary rivers harvests will continue to be the responsibility of the Chinook Technical Committee as modified by (a) through (c) above.

- (xix) The Parties shall determine the domestic allocation of their respective harvest shares.
- (xx) When the terminal run is insufficient to provide for the Party's Taku Chinook BLC and the lower end of the escapement goal range, the reductions in each Party's base level fisheries, i.e. the fisheries that contributed to the BLCs, will be proportionate to the Taku Chinook BLC shares, excluding the test fishery.
- (xxi) When the escapement of Taku River Chinook salmon is below the lower bound of the agreed escapement range for three consecutive years, the Parties will examine the management of base level fisheries and any other fishery which harvests Taku River Chinook salmon stocks, with a view to rebuilding the escapement.

Alsek River:

Annex IV, Chapter 1, Paragraph 3(c)

- (i) By 2008, the Parties will develop and implement cooperative abundance-based management programs for Alsek River Chinook, sockeye and coho salmon, including agreed escapement and management goals for Chinook, sockeye and coho salmon.
- (ii) The Committee will develop an annual pre-season fishery management plan for Alsek River fisheries by May 1.
- (iii) Chinook salmon:
- The Parties agree that new directed fisheries on Alsek River Chinook salmon will not occur without the consent of both Parties and an agreed abundance-based management regime has been developed.
 - In 2005 through 2008, the Parties agree to conduct an assessment test fishery to be administered by the U.S. under terms to be developed by the Committee. The test fishery will be conducted over the duration of the run. The overall Chinook catch in the test fishery will not exceed 500 fish. All fish caught will be sampled for length, age, sex and tissue (for genetic stock ID).
 - In 2005 through 2008, the Committee will develop in-river abundance estimates of Alsek Chinook salmon and a stock identification program.
- (iv) Sockeye salmon:
- In 2005 through 2008, the Committee will refine and implement inseason abundance-based management. The Parties will endeavour to continue to explore methods for determining inriver abundance (such as genetic stock ID).
 - In 2005 through 2008, weekly tissue samples will be collected from the Dry Bay commercial fishery in addition to the normal sampling program.
- (v) Coho salmon:
- The Parties agree to develop an abundance-based management regime.

4. The Parties agree that if catch allocations set out for transboundary river salmon are not attained due to management actions by either Party in any one year, compensatory adjustment shall be made in subsequent years. If a shortfall in the actual catch of a Party is caused by management action of that Party, no compensation shall be made. The Parties agree that midway through the Chapter period, the harvest sharing performance will be evaluated and adjustments made over the remainder of the Chapter period, if necessary. At the end of the Chapter period, cumulative overages or underages will be carried forward to the next Chapter period.

5. The Parties agree that midway through the Chapter period, or other agreed time, they will review the current Chapter and may determine if they want to renew the Chapter for an additional period of time.

6. Consistent with paragraph 2 above, the Parties agree to develop and implement abundance-based fishery regimes for Taku and Stikine River chinook and coho salmon. Once bilaterally agreed MSY escapement objectives and in-season stock assessment programs are established, the Parties agree to examine their respective abilities to access enhanced sockeye salmon and re-examine harvest sharing arrangements for chinook, sockeye and coho salmon.

7. The Parties agree to consider cooperative enhancement possibilities and to undertake, as soon as possible, studies on the feasibility of new enhancement projects on the transboundary rivers and adjacent areas for the purpose of increasing productivity of stocks and providing greater harvests to the fishermen of both countries.

8. Recognizing that stocks of salmon originating in Canadian sections of the Columbia River constitute a small portion of the total populations of Columbia River salmon, and that the arrangements for consultation and recommendation of escapement targets and approval of enhancement activities set out in Article VII are not appropriate to the Columbia River system as a whole, the Parties consider it important to ensure effective conservation of up-river stocks which extend into Canada and to explore the development of mutually beneficial enhancement activities. Therefore, notwithstanding Article VII, paragraphs 2, 3, and 4, the Parties shall consult with a view to developing, for the transboundary sections of the Columbia River, a more practicable arrangement for consultation and setting escapement targets than those specified in Article VII, paragraphs 2 and 3. Such arrangements will seek to, *inter alia*:

(a) ensure effective conservation of the stocks;

(b) facilitate future enhancement of the stocks on an agreed basis; and

(c) avoid interference with United States management programs on the salmon stocks existing in the non-transboundary tributaries and the main stem of the Columbia River.

Appendix to Annex IV, Chapter 1:
Understanding on the Joint Enhancement of Transboundary River Sockeye Stocks

Pursuant to Annex IV of the Pacific Salmon Treaty, and recognizing the desire of Canada and the United States to continue a joint enhancement program for the transboundary rivers that is carefully planned and co-ordinated:

- I. The Parties agree:
 - (a) to continue to develop strategies for management of the enhanced stocks prior to the return of adult fish;
 - (b) to continue to develop an agreed process for conducting periodic review of implemented projects to identify and recommend action regarding, *inter alia*:
 - (i) success or failure of a project in a given year or series of years;
 - (ii) a distribution of benefits that is substantially different than expected; and
 - (iii) costs which are substantially greater than expected; and
 - (c) to recommend a plan, when required, for funding of projects including:
 - (i) cost sharing arrangements between the Parties; and
 - (ii) long term funding obligations.
2. The Parties agree to maintain an Enhancement Subcommittee of the joint Transboundary Technical Committee whose Terms of Reference shall be, *inter alia*, to:
 - (a) develop preliminary summaries of various projects which meet the enhancement goals established by the Transboundary Panel;
 - (b) develop detailed feasibility studies for projects selected by the Transboundary Panel, including:
 - (i) estimation of costs and benefits;
 - (ii) likelihood of success;
 - (iii) schedules for implementation;
 - (iv) procedures for evaluation; and
 - (v) fisheries management plans for the enhanced stocks; and
 - (c) monitor implementation of projects and report progress to the Transboundary Panel.
3. Project Selection:
 - (a) General Guidelines:

(i) If broodstock is not available to provide the agreed number of eggs, up to 30% of the available adults will be taken, provided that a minimum of 600,000 eggs are available; if this minimum number is not available, no eggs will be taken;

(ii) A reasonable expectation that a stock identification technique will be available to estimate the contribution of enhanced sockeye in mixed stock fisheries is required in order for these projects to proceed. The appropriate stock identification technique for each fishery will be determined by the joint Transboundary Technical Committee.

(b) Stikine River:

For the duration of this Chapter, the eggtake goal for the Stikine sockeye enhancement program will be six million eggs. The Tahltan Lake sockeye salmon stock will be used as the source of eggs. Eggs will be incubated at the Port Snettisham central incubation facility (CIF). Fry will be planted into Tahltan and Tuya Lakes in the following manner, subject to review by the joint Transboundary Technical Committee:

a. When the sockeye escapement through the Tahltan Lake weir is less than 15,000 fish or an agreed alternate threshold, all fry will be returned to Tahltan Lake;

b. When the sockeye escapement through the Tahltan Lake weir is greater than 15,000 fish or an agreed alternate threshold, the fry will be distributed to Tahltan and Tuya Lakes in a manner which maximizes harvestable production and provides information on the potential production capacity of Tuya Lake.

(c) Taku River:

For the duration of this Chapter, the eggtake goal for the Taku sockeye enhancement program will be five million eggs. The Tatsamenie Lake salmon stock will be used as the source of eggs. Eggs will be incubated at the Port Snettisham central incubation facility (CIF). Fry will be planted into Tatsamenie Lake.

4. Harvest principles and cost sharing:

(a) The Parties desire to maximize the harvest of enhanced sockeye salmon in their existing fisheries while considering the conservation needs of wild salmon runs. To avoid impacts on co-migrating stocks and species, exploitation rates applied to Taku and Stikine river sockeye salmon in existing mixed stock fisheries in Canada and the United States shall be at levels compatible with the maintenance of wild stocks.

(b) Harvest sharing arrangements for enhanced stocks will be determined prior to the time eggs are taken to initiate production level enhancement.

5. Cost sharing:

(a) In carrying out joint enhancement projects, capital construction and on-site operating costs shall be borne by the country on whose soil the project components are located.

(b) The costs of producing Stikine River enhanced sockeye salmon shall be shared as follows:

- (i) To be paid by Canada:
 - a. Egg take;
 - b. Egg transport;
 - c. Smolt sampling;
 - d. Sampling and numerical analysis necessary to determine the contribution of enhanced transboundary river sockeye salmon to Canadian fisheries; and
 - e. Limnology sampling and hydroacoustics.
 - (ii) To be paid by the United States:
 - a. Construction and operation of that portion of the Port Snettisham CIF that is dedicated to enhancement projects on the transboundary rivers.
 - b. Transport of fry to enhancement site; and
 - c. Sampling and analysis necessary to determine the contribution of enhanced transboundary river sockeye salmon to United States fisheries.
 - (iii) Projects to be conducted jointly:
 - a. Disease sampling and analysis.
- (c) The costs of producing Taku River enhanced sockeye salmon shall be shared as follows:
- (i) To be paid by Canada:
 - a. Egg take;
 - b. Egg transport;
 - c. Smolt sampling;
 - d. Sampling and numerical analysis necessary to determine the contribution of enhanced Taku River sockeye stocks to Canadian fisheries;
 - e. Limnology sampling and hydroacoustics; and
 - f. Investigations to determine the feasibility of using sockeye from terminal areas, surplus to brood stock and spawning requirements in enhanced systems, for cost recovery.
 - (ii) To be paid by the United States:
 - a. Construction and operation of that portion of the Port Snettisham CIF that is dedicated to enhancement projects on the transboundary rivers;
 - b. Transport of fry to the enhancement site;
 - c. Sampling and analysis necessary to determine the contribution of enhanced transboundary river sockeye salmon to United States fisheries; and
 - d. Processing of sockeye otolith samples collected in the Taku River.
 - (iii) Projects to be conducted jointly:
 - a. Disease sampling and analysis; and
 - b. Identification and evaluation of alternative sockeye salmon enhancement opportunities in the Taku River.

Chapter 4: Fraser River Sockeye and Pink Salmon

1. The provisions of this Chapter shall apply for the period 2005 through 2010.
2. The U.S. share of the annual Fraser River sockeye and pink salmon Total Allowable Catch (the "TAC"), as defined in paragraph 3 to be harvested in the waters of Washington State is as follows:
 - (a) for sockeye salmon, the U.S. catch in the Fraser Panel Area shall not exceed 16.5 percent of the TAC;
 - (b) for pink salmon, the U.S. catch in the Fraser Panel Area shall not exceed 25.7 percent of the TAC.
3. For the purpose of this Chapter, the TAC shall be defined as the remaining portion of the annual aggregate Fraser River sockeye and pink runs (including any catch of Fraser River sockeye identified in Alaskan waters) after the spawning escapement targets established, unless otherwise agreed, by application of Canada's pre-season escapement plan (subject to any adjustments made pursuant to paragraph 3(b), below), the agreed Fraser River Aboriginal Exemption, and the catch in Panel authorized test fisheries have been deducted. TAC shall be computed separately for Fraser River sockeye and pink salmon. The following definitions and procedures apply to TAC calculations:
 - (a) The annual U.S. share shall be computed based on the inseason run size estimates in effect at the time the Panel relinquishes control of the U.S. Panel waters, using the escapement targets established by application of Canada's preseason escapement plan as may be adjusted pursuant to paragraph 3(b), below, and taking into account any adjustments as provided in paragraph 8, below.
 - (b) For the purposes of in-season management by the Fraser River Panel, the spawning escapement objective is the target set by Canada, including any extra requirements that may be identified and agreed to by the Fraser River Panel, for natural, environmental, or stock assessment factors, to ensure the fish reach the spawning grounds at target levels. In the event the Fraser River Panel does not agree to additional escapement amounts, the PSC staff will make a recommendation which shall become effective upon agreement by at least one national section of the Panel. Any additional escapement amounts believed necessary by Canada above those determined pursuant to the foregoing will not affect the U.S. share.
 - (c) The agreed Fraser River Aboriginal Fishery Exemption (AFE) is that number of sockeye which is subtracted from the total run size in determining the TAC upon which the U.S. shares specified in paragraph 2 are calculated. Any Canadian harvests in excess of these amounts count against the TAC, and do not affect the U.S. share. The agreed Fraser River Aboriginal Fishery Exemption is the actual catch of Fraser River sockeye harvested in both the in-river and marine area Aboriginal Fisheries, up to 400,000 sockeye annually.

- (d) For computing TAC by stock management groupings, the AFE shall be allocated to management groups as follows: The Early Stuart sockeye exemption shall be up to 20% of the Fraser River Aboriginal Fishery Exemption (AFE), and the remaining balance of the latter exemption shall be based on the average proportional distribution for the most recent three cycles and modified annually as required to address concerns for Fraser River sockeye stocks and other species and as otherwise agreed by the Fraser River Panel. For the duration of this Chapter, the harvest distribution of Early Stuart sockeye is expected to remain similar to that of recent years.
- (e) To the extent practicable, the Fraser River Panel shall manage the United States fishery to spread the United States harvest proportionately to the TACs across all Fraser River sockeye stock management groupings (Early Stuart, Early Summer, Mid-Summer, and Late Run).
4. Pursuant to Article IV, paragraph 3, Canada shall annually establish the Fraser River sockeye and pink salmon spawning escapement targets for the purpose of calculating the annual TAC. For the purposes of pre-season planning, where possible, Canada shall provide forecasts of run size and spawning escapement requirements by stock management groupings to the Fraser River Panel no later than the annual meeting of the Commission. Forecasts of migration patterns, gross escapement needs, and any in-season adjustments in escapement requirements shall be provided to the Fraser River Panel by Canada as they become available in order to accommodate the management needs of the Panel in a timely manner. In addition, on a timely basis, the United States shall provide forecasts of sockeye and pink salmon run size returns affected by Panel management.
 5. The Fraser River Panel will develop fishing plans and in-season decision rules as may be necessary to implement the intent of this Chapter. The Parties shall establish and maintain data sharing principles and processes which ensure that the Parties, the Commission, and the Fraser River Panel are able to manage their fisheries in a timely manner consistent with this Chapter. With respect to management responsibilities, all activities of the Parties and the Fraser River Panel shall be consistent with the August 13, 1985, Memorandum of Understanding between the Parties.
 6. Fraser River Panel pre-season planning meetings that do not occur simultaneously with Commission meetings shall be held alternately in Canada and the United States. Scheduled in-season management meetings shall be held at Richmond, B.C. unless the Panel agrees otherwise. As agreed, Panel meetings may be held by telephone conference call.
 7. The Parties may agree to adjust the definition of the Fraser Panel Area as necessary to simplify domestic fishery management and ensure adequate consideration of the effect on other stocks and species harvested in the Area.
 8. Annually, the U.S. share shall be adjusted for harvest overages and underages in accordance with annual guidance provided by the Commission.
 9. The Parties shall establish a Technical Committee for the Fraser River Panel:
 - (a) the members shall coordinate the technical aspects of Fraser River Panel activities

with and between the Commission staff and the national sections of the Fraser River Panel, and shall report, unless otherwise agreed, to their respective National Sections of the Panel. The Committee may receive assignments of a technical nature from the Fraser River Panel and will report results directly to the Panel.

- (b) membership of the Technical Committee shall consist of up to five such technical representatives as may be designated by each National Section of the Commission.
- (c) members of the Technical Committee shall analyze proposed management regimes, provide technical assistance in the development of proposals for management plans, explain technical reports and provide information and technical advice to their respective National Sections of the Panel.
- (d) the Technical Committee shall work with the Commission staff during pre-season development of the fishery regime and management plan and during in-season consideration of regulatory options for the sockeye and pink salmon fisheries of Fraser Panel Area waters and during post-season evaluations of the season to ensure that:
 - (i) domestic allocation objectives of both Parties are given full consideration;
 - (ii) conservation requirements and management objectives of the Parties for species and stocks other than Fraser River sockeye and pink salmon in the Fraser Panel Area during periods of Panel regulatory control are given full consideration; and
 - (iii) the Commission staff is informed in a timely manner of management actions being taken by the Parties in fisheries outside of the Fraser Panel Area that may harvest sockeye and pink salmon of Fraser River origin.
- (e) the staff of the Commission shall consult regularly in-season with the Technical Committee to ensure that its members are fully informed in a timely manner on the status of Fraser River sockeye and pink salmon stocks, and the expectations of abundance, migration routes and proposed regulatory options, so the members of the Technical Committee can brief their respective National Sections prior to each in-season Panel meeting.

10. The Parties agree that Panel management actions should meet the following objectives, listed in order of priority:

- (a) obtain spawning escapement goals by stock or stock grouping;
- (b) meet Treaty defined international allocation; and
- (c) achieve domestic objectives.

11. The Fraser River Panel shall manage its fisheries consistent with the provisions of the other chapters of Annex IV to ensure that the conservation needs and management requirements for other salmon species and other sockeye and pink salmon stocks are taken into account.
12. The Parties agree to develop regulations to give effect to the provisions of the preceding paragraphs. Upon approval of the pre-season plan and during the period of Panel regulatory control, all sockeye and pink fisheries under the Panel's jurisdiction are closed unless opened for fishing by in-season order of the Panel.
13. Pursuant to the Parties' obligations under Article VI the Panel will use the following in-season decision process:
 - (a) The mid-point forecast provided by Canada will be used for management purposes until in-season updates of run size become available. Based upon advice from the Fraser River Panel Technical Committee and PSC staff, the Panel may adopt a more precautionary or optimistic applications of the forecast information until in-season updates of run size are available. PSC staff will provide the Fraser River Panel with recommendations for in-season run size and other factors relevant to sound fisheries management decisions. Based on information such as, but not limited to, in-season estimates of run timing and diversion rate, the PSC staff will make recommendations to the Fraser River Panel regarding in-season decision making.
 - (b) PSC staff will provide the Fraser River Panel with projected harvestable surpluses and status of harvest from fisheries under Panel management. These projections will incorporate any Fraser River Panel agreement on management adjustments that deal with environmental conditions during in-river migration that could significantly impact the Fraser River Panel's ability to achieve spawning escapement objectives and other considerations agreed to by the Panel.
 - (c) Any changes from PSC staff recommendations for points 13(a) and 13(b) above shall be based on bilateral agreement between the National Sections of the Fraser Panel. Acceptance of the PSC staff recommendation requires approval of at least one of the National Sections.
 - (d) The respective National Sections of the Panel will develop proposed regulations for their domestic Panel Water fisheries consistent with recommendations and projections provided by the PSC staff as described in 13(a) and 13(b) as may be modified pursuant to 13(c). Either National Section may ask PSC staff for advice in designing its fisheries proposals. PSC staff will assess and provide advice as to whether proposed fishery regulations for Panel Water fisheries are consistent with recommendations and projections described in 13(a) and 13(b) and Panel objectives. Subsequently, after full discussion of a Panel water fishery proposal, the following may occur: (i) the Panel may adopt the proposal based on bilateral agreement or; (ii) the proposing National Section may modify and re-submit its proposal in response to advice from staff and/or concern(s) raised by the other National Section; or (iii) while acknowledging objection(s) of the other National Section, the Panel will grant the request to adopt the fishery proposal. In the event that the Panel adopts a fishery under the provisions of the latter circumstance (13(d)(iii)), prior to the commencement of the proposed fishery,

the proposing National Section must provide a written rationale for the fishery as submitted.

- (e) If post-season a party maintains that it has been adversely affected by a fishery they objected to pursuant to paragraph 13(d)(iii) above or paragraph 13 (f) below; the PSC staff will prepare an objective report on the circumstances of the fishery and its consequences for the January PSC meeting following the season in question. The Panel will review the staff report and determine what action is required. If the Panel cannot come to agreement on the appropriate action, the issue will be referred to the Commission for resolution during its February annual meeting.
- (f) Pursuant with Article VI, paragraph 7 of the treaty, the Parties will communicate and consult with one another in a timely manner regarding their fishing plans for Fraser River sockeye outside of the Panel's regulatory control. In the event that a party has an objection to the other party's fishing plans as they relate to achievement of Panel objective, the implementing party will provide the rationale for such plans.

Appendix B

Appointment of Officers for 2004/2005

Effective December 1, 2004 a new slate of officers for the Pacific Salmon Commission was identified as follows:

Office	Country	Representative
Commission Chair	Can.	Dr. John Davis
Commission Vice-Chair	U.S.	Mr. David Bedford
Fraser River Panel Chair	Can.	Vacant
Fraser River Panel Vice-Chair	U.S.	Ms. Lorraine Loomis
Northern Panel Chair	Can.	Mr. David Einarson
Northern Panel Vice-Chair	U.S.	Mr. Gordon Williams
Southern Panel Chair	Can.	Mr. Ed Lockbaum
Southern Panel Vice-Chair	U.S.	Mr. Patrick Pattillo
Transboundary Panel Chair	Can.	Mr. Gordon Zealand
Transboundary Panel Vice-Chair	U.S.	Dr. John H. Clark
Stan. Comm. on F&A - Chair	Can.	Dr. John Davis
Stan. Comm. on F&A - Vice-Chair	U.S.	Mr. Rollie Rouseau
Stan. Comm. on Scientific Cooperation - Chair	U.S.	Mr. Steve Pennoyer
Stan. Comm. on Scientific Cooperation - Vice-Chair	U.S.	Dr. Laura Richards
Technical Committee on Data Sharing - Co-Chair	Can.	Mr. Marc Hamer
Technical Committee on Data Sharing - Co-Chair	U.S.	Ms. Norma Jean Sands
Fraser River Panel Technical Committee - Co-Chair	Can.	Mr. Les Jantz
Fraser River Panel Technical Committee - Co-Chair	U.S.	Mr. Mike Grayum
Northern Boundary Technical Committee - Co-Chair	Can.	Mr. David Peacock
Northern Boundary Technical Committee - Co-Chair	U.S.	Mr. Glen Oliver
Transboundary Technical Committee - Co-Chair	Can.	Mr. Sandy Johnston
Transboundary Technical Committee - Co-Chair	U.S.	Mr. Scott Kelley
Enhancement Sub-Committee of the Transboundary Technical Committee - Co-Chair	Can.	Mr. Pat Milligan
Enhancement Sub-Committee of the Transboundary Technical Committee - Co-Chair	U.S.	Mr. Ron Josephson
Joint Technical Committee on Chinook - Co-Chair	Can.	Mr. Rick McNicol
Joint Technical Committee on Chinook - Co-Chair	U.S.	Mr. Dell Simmons
Joint Technical Committee on Coho - Co-Chair	Can.	Mr. Wilf Luedke
Joint Technical Committee on Coho - Co-Chair	U.S.	Dr. Gary S. Morishima
Joint Technical Committee on Chum - Co-Chair	Can.	Mr. Leroy Hop Wo
Joint Technical Committee on Chum - Co-Chair	U.S.	Mr. Gary Graves
Selective Fishery Evaluation Committee - Co-Chair	Can.	Dr. Brent Hargreaves
Selective Fishery Evaluation Committee - Co-Chair	U.S.	Dr. Gary S. Morishima

Appendix C

Approved Budget FY 2005/2006

1. INCOME

A.	Contribution from Canada	\$1,545,507
B.	Contribution from U.S.	<u>\$1,545,507</u>
	Sub total	\$3,091,014
C.	Carry-over from 2004/2005	\$ 342,629
D.	Interest	\$ 10,000
E.	Other income	<u>\$ 0</u>
F.	Total Income	<u>\$3,443,643</u>

2. EXPENDITURES

A.	1. Permanent Salaries and Benefits	\$2,108,255
	2. Temporary Salaries and Benefits	<u>\$ 259,847</u>
	3. Total Salaries and Benefits	\$2,368,102
B.	Travel	\$ 133,595
C.	Rents, Communications, Utilities	\$ 133,187
D.	Printing and Publications	\$ 18,500
E.	Contractual Services	\$ 560,080
F.	Supplies and Materials	\$ 72,440
G.	Equipment	<u>\$ 157,740</u>
H.	Total Expenditures	<u>\$3,443,643</u>

<u>3.</u>	<u>BALANCE (DEFICIT)</u>	\$ 0
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4. TEST FISHING PROGRAM

A.	Forecast Revenues	\$ 861,668
B.	Forecast Expenditures	<u>\$ 856,577</u>
C.	Forecast Balance	<u>\$ 5,091</u>

<u>5.</u>	<u>TOTAL BALANCE (DEFICIT)</u>	<u>\$ 5,091</u>
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Appendix D

Pacific Salmon Commission Secretariat Staff as of March 31, 2005

EXECUTIVE OFFICE

Don Kowal
Executive Secretary

Teri Tarita
Records Administrator/Librarian

Vicki Ryall
Meeting Planner

Kimberly Bartlett
Secretary

Kathy Mulholland
IT Manager

Sandi Gibson
IT Support Specialist

FINANCE & ADMINISTRATION

Kenneth N. Medlock
Controller

Bonnie Dalziel
Accountant

Angus Mackay
Fund Coordinator

FISHERY MANAGEMENT

Mike Lapointe
Chief Biologist

Jim Gable
Head, Racial Identification Group

Jim Cave
Head, Stock Monitoring Group

Steve Latham
Project Biologist, Sockeye

Peter Cheng
Project Biologist, Acoustics

Bruce White
Project Biologist, Pinks

Ian Guthrie
Head, Biometrics

Keith Forrest
Racial Data Biologist

Yunbo Xie
Hydroacoustics Scientist

Maxine Reichardt
Senior Scale Analyst

Andrew Gray
Hydroacoustics Biologist

Julie Sellars
Assistant Scale Analyst

Fiona Martens
Hydroacoustic Technician (term)

Holly Anozie
Scale Lab Assistant

Christine Tovey
Test Fishing Biologist

Jacqueline Boffey
Scale Lab Assistant (term)

Victor Keong
Fishery Technician (term)

Appendix E

Membership Lists for Standing Committees, Panels, Joint Technical Committees and other Appointments as of March 31, 2005

1. STANDING COMMITTEE ON FINANCE AND ADMINISTRATION

Dr. John Davis (Chair)
Mr. Alan Borcham
Mr. Ron Faust

Mr. Rollie Rousseau (Vice-Chair)
Mr. W. Ron Allen
Mr. David Bedford
Mr. Dave Cantillon
Mr. Roy Chavera
Mr. James Heffernan

Staff

Mr. Don Kowal (ex. Officio)

Editorial Board

Mr. Tim Young

Mr. Dave Cantillon (acting)

Staff

Mr. Don Kowal (ex. Officio)

2. FRASER PANEL

Mr. Randy Brahniuk (Chair)
Mr. Murray Chatwin
Mr. Mike Griswold
Mr. Terry Lubzinski
Chief Ken Malloway
Mr. Larry Wick

Ms. Lorraine Loomis (Vice-Chair)
Mr. Dave Cantillon
Mr. Robert F. Kehoe

FRASER RIVER PANEL - ALTERNATES

Mr. Brian Assu
Mr. Tom Bird
Mr. Les Rombough
Mr. Peter Sakich
Mr. Marcel Shepert

Mr. Ronald G. Charles
Mr. Jack R. Giard
Mr. John Long
Mr. Patrick Pattillo
Mr. Keith C. Schultz

3. SOUTHERN PANEL

Mr. Ed Lochbaum (Chair)
Mr. John Legate
Dr. Don Hall
Mr. Jeremy Maynard
Mr. Paul Rickard

Mr. Patrick Pattillo (Vice-Chair)
Mr. Burnie Bohn
Mr. Larry Carpenter
Mr. Peter Dygert
Mr. James E. Harp
Mr. Terry Williams

SOUTHERN PANEL - ALTERNATES

Mr. Errol Sam
Mr. Barry Rosenberger
Ms. Marilyn Murphy
Mr. Bill Pirie
Mr. Stan Watterson

Mr. Richard Lincoln
Mr. Curt Melcher
Mr. Randy A. Settler
Mr. Andy Whitener
Mr. Keith Wilkinson
Mr. Robert Wunderlich

4. NORTHERN PANEL

Mr. Dave Einarson (Chair)
Mr. Bill de Greef
Mr. John Murray
Mr. John McCulloch
Mr. Greg Taylor
Mr. Chris Barnes

Mr. Gordon Williams (Vice-Chair)
Mr. William F. Auger
Mr. James E. Bacon
Mr. William Hines
Mr. Howard Pendell

NORTHERN PANEL - ALTERNATES

Mr. John Brockley
Chief Harry Nyce Sr.
Ms. Deborah Jeffrey
Mr. Rick Haugan
Ms. Pat Moss
Mr. Bruce Shepherd

Mr. Arnold Enge
Dr. Jack Helle
Mr. Dennis Longstreth
Mr. Robert M. Thorstenson
Mr. Thomas Brookover

5. TRANSBOUNDARY PANEL

Mr. Gordon Zealand (Chair)
Mr. Ronald Chambers
Ms. Cheri Frocklage
Mr. Stephan Jacobs
Mr. Ray Kendel
Mr. John Ward

Dr. John H. Clark (Vice-Chair)
Mr. James Becker
Mr. Richard Davis
Mr. Arnold Enge
Mr. William Hines
Mr. Stanley D. Malcom
Mr. Andrew McGregor

6. STANDING COMMITTEE ON SCIENTIFIC COOPERATION

Dr. Laura Richards (Vice-Chair)
Dr. Dick Beamish

Mr. Steve Pennoyer (Chair)
Dr. David Hankin

7. NORTHERN FUND COMMITTEE

Mr. Dave Einarson (Co-Chair)
Mr. Ron Fowler
Mr. Gordon Zealand

Mr. Jim Balsiger (Co-Chair)
Mr. David Bedford
Mr. Jev Shelton

8. SOUTHERN FUND COMMITTEE

Mr. Wilf Luedke (Co-Chair)
Dr. Don Hall
Mr. William Otway

Mr. Rollie Rousseau (Co-Chair)
Mr. Olney Patt Jr.
Mr. Larry Rutter

9. JOINT TECHNICAL COMMITTEE ON CHINOOK

Dr. Rick McNicol (Co-Chair)
Dr. Gayle Brown
Mr. Wilf Luedke
Ms. Karen Mathias
Mr. Chuck Parken
Mr. Julian Sturhahn
Dr. Arlene Tompkins
Mr. Ivan Winther

Mr. Dell Simmons (Co-Chair)
Mr. David Bernard
Mr. John Carlile
Dr. John H. Clark
Mr. Gary R. Freitag
Ms. Pam Goodman
Mr. Charles M. Guthrie
Mr. Edgar Jones
Dr. Robert Kope
Mr. Brian Lynch
Mr. Scott Marshall
Ms. Marianne McClure
Mr. Scott McPherson
Dr. Gary S. Morishima
Mr. James F. Packer
Mr. Joseph Polos
Mr. Rishi Sharma
Mr. Hal Weeks
Mr. Alex C. Wertheimer
Mr. Henry J. Yuen
Mr. Shijie Zhou

10. JOINT TECHNICAL COMMITTEE ON COHO

Mr. Wilf Luedke (Co-Chair)
Mr. Richard Bailey
Ms. Diana Dobson
Dr. Blair Holtby
Ms. Karin Mathias
Mr. Chuck Parken
Mr. Kent Simpson
Ms. Melanie Sullivan
Mr. Joe Tadey
Dr. Arlene Tompkins
Mr. Pieter Van Will

Dr. Gary S. Morishima (Co-Chair)
Ms. Carrie Cook-Tabor
Mr. Robert A. Hayman
Mr. Jeff Haymes
Dr. Peter W. Lawson
Mr. Curt Melcher
Mr. James B. Scott
Ms. Laurie Weitkamp

(Northern Coho)

Dr. John H. Clark
Ms. Michele Masuda
Mr. Leon D. Shaul

11. JOINT TECHNICAL COMMITTEE ON CHUM

Mr. Leroy Hop Wo (Co-Chair)
Mr. Wilf Luedke
Mr. Clyde Murray
Ms. Melanie Sullivan
Mr. Pieter Van Will

Mr. Gary R. Graves (Co-Chair)
Ms. Angelika Hagen-Breaux
Mr. Nick Lampsakis
Mr. Thomas Kane
Dr. Gary Winans

12. TECHNICAL COMMITTEE ON DATA SHARING

Mr. Marc Hamer (Co-Chair)
Ms. Lia Bijsterveld
Ms. Sue Lehmann

Dr. Norma Jean Sands (Co-Chair)
Dr. Ken Johnson
Mr. Ron Josephson
Mr. Mike Matylewich
Dr. Gary S. Morishima
Mr. Dick O'Connor
Mrs. Amy Seiders

Working Group on Data Standards

Mr. Marc Hamer (Co-Chair)
Ms. Brenda Adkins
Ms. Kathryn Fraser

Dr. Ken Johnson (Co-Chair)
Mr. P. Brodie Cox
Mr. William Johnson
Mr. John Leppink
Mr. Ken Phillipson

13. FRASER RIVER PANEL TECHNICAL COMMITTEE

Mr. Les Jantz (Co-Chair)
Mr. Jeff Grout
Mr. Alan Cass
Mr. Ron Goruk
Mr. Mike Staley

Mr. Michael Grayum (Co-Chair)
Ms. Angelika Hagen-Breaux
Mr. Chris Wright

14. NORTHERN BOUNDARY TECHNICAL COMMITTEE

Mr. David Peacock (Co-Chair)
Mr. Dana Atagi
Mr. Steve Cox-Rogers
Mr. Mark Potyrala

Mr. Glen Oliver (Co-Chair)
Mr. Phillip S. Doherty
Mr. Gary R. Freitag
Mr. William Heard
Mr. Steve Heint
Dr. Jerome J. Pella
Mr. John Wilcock
Mr. Xinxian Zhang

15. SELECTIVE FISHERY EVALUATION COMMITTEE

Dr. Brent Hargreaves (Co-Chair)
Ms. Sue Lehmann

Dr. Gary S. Morishima (Co-Chair)
Dr. Marianna Alexandersdottir
Ms. Carrie Cook-Tabor
Mr. Harold Geiger
Dr. Annette Hoffmann
Mr. Ken Johnson
Mr. Ron Josephson
Mr. Mark Kimbel
Mr. Greg Mauser
Mr. Doug Milward
Mr. Ron Olson
Mr. Patrick Pattillo
Dr. Norma Jean Sands
Mr. Rishi Sharma
Mr. Dell Simmons

16. TRANSBOUNDARY TECHNICAL COMMITTEE

Mr. Sandy Johnston (Co-Chair)
Mr. Ian Boyce
Mr. Pete Etherton
Mr. Rick Ferguson
Mr. Bill Waugh

Mr. Scott Kelley (Co-Chair)
Mr. Jim Andel
Mr. William R. Bergmann
Ms. Kathleen A. Jensen
Mr. Edgar Jones
Mr. John Joyce
Mr. Kevin Monagle
Mr. Keith Pahlke
Mr. Troy Thynes
Mr. Gordon Woods

ENHANCEMENT SUB-COMMITTEE

Mr. Pat Milligan (Co-Chair)
Dr. Kim Hyatt
Mr. Paul Rankin

Mr. Ron Josephson (Co-Chair)
Mr. Eric Prestegard
Mr. Steve Reifensuhl

17. JOINT CHINOOK INTERFACE GROUP

Mr. Gerry Kristianson (Chair)
Mr. Ron Fowler
Mr. Russ Jones

Mr. Jev Shelton (Vice-Chair)
Mr. Larry Cassidy
Mr. Olney Patt Jr.

18. NATIONAL CORRESPONDENTS

Mr. Alan Boreham

Mr. Dave Cantillon (acting)

